American Aviation

The Independent Voice of American Aeronautics

MARCH 15, 1943

Capacity For Leadership

Fortnightly Review

GLOBAL post-war transportation economics, with aviation an important new factor, is very much on some of the better and more sage Congressional minds these days. This is very encouraging, for the nation is looking with increasing hopefulness to sturdy Congressional leadership to explore the multitude of post-war problems with which we shall be faced as time moves on.

The favorable report of the Senate Finance Committee on Senate Resolution 102 introduced by Senator Walter F. George, of Georgia, is clearly a "straw in the wind" showing evidence of the growing concern in Congress about post-war air transportation. This resolution would authorize a Senate committee on post-war planning "to investigate all matters relating to post-war economic policy and problems, . . . gather information, plans and suggestions from informed sources with respect to such problems, . . . study suggestions received, . . . and report to Congress from time to time the results of finds made and conclusions reached".

In the Senate cloakrooms these days, where the temper and thinking of the country at large is being more clearly voiced than during the past few years, the conversation leaves little doubt that the interdepartmental committee created by the White House to establish policies for developing post-war aviation, headed by Assistant Secretary of State Adolph A. Berle, Jr., does not have the capacity for leadership and does not include what some Senators consider "informed sources." The Berle committee, in effect, is merely another one of the multitude of supernumerary interdepartmental groups of government appointees spawned during the past decade. Perhaps we've had enough of this type of committee. Bureaucratic or not, depending upon your own views, these committees rarely reflect the thinking or determination of the American people.

Not only the Senate Finance Committee, but members of the Military Affairs, Naval Affairs, Foreign Relations and Commerce Committees are said to favor a Senate invitation to a group of experts that would constitute a confidential advisory committee in connection with global transportation economics. And

(Turn to page 8)

Memory in The Rochester Times-Union

Big Push Is On

AAF and RAF Pound Europe Round the Clock, as MacArthur's Planes Wipe Out 15,000 Jap Troops and 22 Ship Convoy.

Late Bulletins

Boeing Joins AWPC

The Aircraft War Production Council announced Mar. 10 that Boeing Aircraft Co. has joined the Council, bringing to nine the total number of members. The nine AWPC companies now build more than 60% by weight of all U. S. warplanes.

To Act on Lea Bill

Chairman Clarence Lea (D., Calif.) of the House Interstate and Foreign Commerce Committee says the group will take action within three weeks on the Civil Aeronautics Act of 1943.

Ford Needs 30,000 Workers

War Manpower Commission officials in Detroit have revealed the necessity for hiring in coming months 30,000 more workers at Ford's Willow Run plant than had originally been planned. Montague Clark, district WMC director, said that the plant's labor situation is "immediate and serious."

Trend of The News

Lost Battalion: Sitting disconsolately around the country are several hundred former CPT glider trainees who are neither civilians nor soldiers, without income, and can't do anything about it. Some of these boys completed their initial courses as long ago as December but haven't received as much as a form letter or a questionnaire from the War Dept. Refused permanent jobs because of the uncertainty of their status, some have earned nothing since last fall before signing up. Even the $50 subsistence promised them the last half of the course is lost in the red tape maze and hasn't arrived. They resigned good jobs to enlist in the AAF Reserve and learn glider piloting but to date no further instructions have been forthcoming. One patriotic trainee has even written insulting letters to Washington so he'd be turned back to his draft board for reclassification and induction, but it didn't work!

WTS suggests asking AAF. The AAF doesn't seem to know what to do about gliders, but says it hopes to get around to interviewing these pilots sometime and fit them in somewhere.

North to the Orient: Washington is speculating on the "alternative to the land routes to China" which is now being provided by the U. S. and Britain, according to a speaker in the House of Lords. He asserted that he did not refer to the air routes being organized from India. Many here guess it might be a new Alaska-China air route.

Separate Air Force: Chairman Reynolds of the Senate Military Affairs Committee admits privately that the question of a separate air force is dead this session of Congress, as far as his Committee is concerned. The Administration has always been dead-set against the project, or of a single department of national defense, and remains determined.

New Set-Up for ATC: Although officers involved won't talk about it, reorganization of the far-flung Air Transport Command has been underway for several weeks and the revised outline chart will probably display a major operation, including addition of two wings to the original seven. Insiders think Maj. Gen. George will stick as commanding general.

More House Fireworks: Industry veterans are betting their bottom dollar on another fireworks display in the House when the important Lea bill for a revamped Civil Aeronautics Act is ready for the vote. As though post-war aviation in itself weren't a big enough bone to scrap over, an extra added attraction will probably be a sideshow fight over whether a clause will permit all comers to operate airlines, including railroads, truck lines, and steamship companies.

Somervell Flirts with AAF: Lieut. Gen. Somervell's ambitious Services of Supply would like to take over the flourishing new Traffic & Transportation Division set up in the Army Air Forces and has even instructed its zone officers to study the best means for absorption. Actually, the division

(Turn to page 6)

20c

XUM

A FIFTH FREEDOM

To the four freedoms, will be added some day, a fifth freedom—*freedom of flight.* But it can't come till victory has assured the other four. Then . . . freedom to fly with safety, with economy, with comfort and convenience —will mean much to post-war peace and prosperity.

For post-war aircraft will measure trans-oceanic flights in hours, and can literally make all the world, good neighbors. Cities in near-by states will be less than an hour away, and the further development of the helicopter, will actually make *home-based* aircraft feasible and possible.

That's something to work for and plan for. But *right now* we've got something to fight for. We're glad that we, at McDonnell, can add our share to the gigantic contribution which America's aircraft industry is making to victory . . . and to the preservation of the four freedoms which are fundamental to democracy.

McDONNELL *Aircraft Corporation*

Manufacturers of PLANES · PARTS · PLASTICS ★ SAINT LOUIS - MEMPHIS ★

MAIL ME THE NEXT 3

MAIL ME THE NEXT 3 YEARS OF AMERICAN AVIATION and send bill for $5.00

3 years $5.00, for U. S., Mexico, Central and South American Countries. Canada: 3 years $6.50. All other countries, 3 years $9.50.

Send magazines to

Name_____

Address_____

City and State_____

Occupation_____ Company_____

Send bill to

Name_____

Address_____

City and State_____

POSTAGE WILL BE PAID BY ADDRESSEE

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 2455-R. SEC. 510 P. L. & R., HARRISBURG, PA.

AMERICAN AVIATION ASSOCIATES, INC.

American Building,

Washington, D. C.

XUM

What big ears you have!

Long before the first faint hum of a plane can be heard, these giant ears have detected it and the anti-aircraft guns swing into menacing position.

Inch by inch, foot by foot, they turn, following every movement of the approaching craft; and as they turn, the synchronized guns turn, too. Woe to an enemy who chances within their range!

The delicate mechanism that points these guns owes its accuracy in no small measure to the reducers that control the micromatic movement through the arc and bring the guns to bear exactly on their objective.

And Foote Bros. speed reducers are on this job at listening posts with the Army and the Navy throughout our possessions and on our far-flung fronts doing their part in protecting our forces against air-borne aggression.

The lessons learned in the school of war are already assuring our Armed Forces of better speed reducers—sturdier and more compact speed reducers. These same lessons applied to post-war manufacturing promise a new conception of the transmission of power to American manufacturers after the war.

FOOTE BROS. GEAR AND MACHINE CORPORATION
5225 S. Western Boulevard
CHICAGO

FOOTE BROS.

Better Power Transmission Through Better Gears

XUM

"Keep 'em warm"
"Another Job"
well done
by
Aircraft Components
EXHAUST SYSTEMS
The exhaust system and "muff" shown below is a typical development of our exhaust experts. Aircraft engineers, production managers and purchasing agents will appreciate the attention to detail and specialized experience that are behind this latest AIRCRAFT COMPONENTS contribution to better flying.

Experience *Plus*

Call on our engineering or production staffs whenever you start working with Exhaust Systems—our Pacific Coast and Mid-west plants can save you time, money and worry.

AIRCRAFT COMPONENTS, Inc.

VAN NUYS, CALIF. • WICHITA, KANSAS

American Aviation

Vol. 6, No. 20 March 15, 194

Contents

CAB Asks 10% Fare Cut 9

Bomber Conversion Unlikely 14

Aviation Committee Defeated 15

Lovett Praises Pacific Victory 16

Pacific Naval Bases Studied 17

T. P. Wright is Production Chief 18

Lightplane Price Formula Revealed 20

Aircraft Wage Decision Criticized 58

Departments

Civil	34	Financial	70
Congress	15	Manufacturing	58-68
Editorial	8-10	Transport	42-54
Equipment	56-57	War	16-32

The Independent Voice of American Aeronautics

Published the 1st and 15th of each month by American Aviation Associates, Inc., American Building, 1317 F Street, NW., Washington, D. C. Printed at The Telegraph Press, Cameron and Kelker Sts., Harrisburg, Pa. Entered as second class matter at Washington, D. C. and Harrisburg, Pa.

WAYNE W. PARRISH, Editor and Publisher

ROBERT H. WOOD, Executive Editor ERIC BRAMLEY, Managing Editor

Department Editors: Katherine E. Johnsen, Congress; Conrad Campbell (Manufacturing); E. J. Foley (Equipment); Peggy Guetter (West Coast); Mary Pauline Perry (War Agencies); Fulton Catlin (News Assistant).
On Leave with the Military Services: George Shumway, Leonard Eiserer, Charles Adams, David Shawe.

Business Manager, Thomas E. Lindsey Asst. Advertising Manager, Jean Grubb

Regional Representatives:
Miss Peggy Guetter, West Coast Representative, Room 1404, Park Central Bldg., 412 West Sixth St., Los Angeles, Calif. Telephone: Vandike 2680.
Harry Brown, Midwestern Advertising Manager, 522 Briar Place, Chicago, Ill. Telephone: Lakeview 6704.
O. R. Elofson, Eastern Advertising Manager, 2207 RKO Bldg., 1270 Sixth Avenue, New York, N. Y. Telephone: Circle 6-9446.
J. Forecast, British Representative, Edwin Greenwood, Ltd., Strand, W.C.2, Thanet House, London, England.

Publishing Corporation: American Aviation Associates, Inc., Wayne W. Parrish, President; Col. Albert H. Stackpole, Vice-President (in active military service); Brig. Gen. E. J. Stackpole, Jr., Secretary-Treasurer (in active military service)

●

Publications of American Aviation Associates, Inc.:

American Aviation: Subscription rates for U. S., Mexico, Central and South American countries—$3 for 1 year; $4 for 2 years; $5 for 3 years. Canada—$3.50 for 1 year; $6.50 for 3 years. All other countries—$4.50 for 1 year; $9.50 for 3 years. Member of Audit Bureau of Circulation, Associated Business Papers, Inc., and Advertising Federation of America.

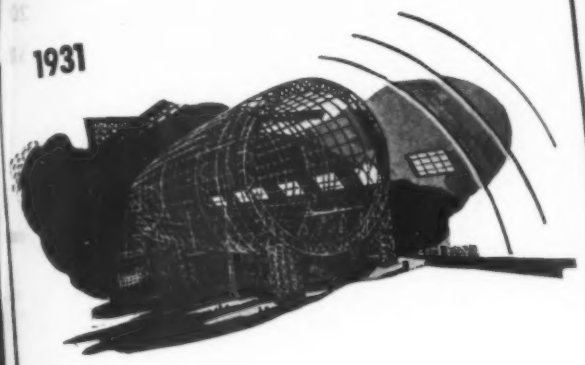
American Aviation Daily: Published six days each week except holidays; dispatched by air mail. A comprehensive newsletter covering daily developments in aviation. $15 per month; $85 for six months; $170 per year. Group company rates on request. Service Bureau available to all subscribers. Conrad Campbell, *Managing Editor.*

American Aviation Directory: Published twice a year, spring and fall. Complete reference data on administrative and operating personnel of airlines, manufacturers, accessories firms and their products, organizations, schools and fixed base operators, Federal and state government agencies concerned with aviation and related aviation interests in the U. S., Canada and Latin America. Single copy $5; Annual subscriptions, $7.50. Discounts on quantity orders. Distribution of Fall-Winter edition now being made. Next edition scheduled for April. Helen L. Walsh, *Managing Editor.*

Universal Airline Schedules: Published and revised monthly at 139 North Clark Street, Chicago, Ill. (Telephone: State 2154). Complete airline schedules, fares and travel information, including international air transportation. Subscription rates: $5.00 per year. Airline rates on request. H. D. Whitney, *Managing Editor.*

Trail Blazing in the Skies

1931



THE LARGEST AIRCRAFT STRUCTURES ever to be built of duralumin in this country were fabricated by Goodyear. Our experience in forming duralumin sections for use in both airplanes and airships goes back to 1923. Most of the duralumin alloys that have been widely used in aircraft construction since then were first produced to meet airship specifications.

1943

TODAY GOODYEAR'S SKILL IN DURALUMIN FABRICATION is helping many of America's most famous airplane manufacturers meet their wartime production schedules. For these companies we are mass-producing wing and tail subassemblies, control surfaces, fuselage and cabin sections. All this is in addition to Goodyear's own production, as a primary contractor, of both complete airplanes and airships for the United States Navy.

GOODYEAR
AIRCRAFT

HOW GOODYEAR AIRCRAFT CORPORATION SERVES THE AVIATION INDUSTRY

1. *By building parts to manufacturers' specifications.*
2. *By designing parts for all types of planes.*
3. *By re-engineering parts for mass production.*
4. *By extending our research facilities to aid the solution of any design or construction problem.*

XUM

Only One Objective ...VICTORY!

The coveted Army-Navy "E" Award flag that now flies above the Wittek plant is a symbol of vital partnership between the war front and the production front. Our nation's highest industrial tribute is, to the men and women of Wittek Manufacturing Co., a challenge and a responsibility... an inspiration to even greater accomplishment in this one objective... VICTORY.

Since the beginning of modern transportation Wittek has been a producer of hose clamps for the automotive and aircraft industries. Today—Wittek Hose Clamps, known as the standard of those industries, are being used by the outstanding military aircraft and combat vehicle manufacturers.

Wittek Manufacturing Co., 4305-15 W. 24th Place, Chicago

WITTEK HOSE CLAMPS
Automotive and Aviation

Trends

(Continued from page 1)

was set up under authority delegated by the SOS Chief of Transportati and all that is necessary is for this authority to be withdrawn, observe say. Such a move would take the formulation of all AAF traffic transportation policies out of AAF's hands. The division, although ha ing growing pains, is said to be doing a fine job, and therefore Air Fo personnel fail to see necessity for a change. This column revealed J 15 that the Division and the Air Transport Command were sparring the same authority over AAF traffic. SOS thus conceivably could control of ATC, the world's greatest airline, and "merge" it with ground operations.

Kaiser & Fleetwings: Henry J. Kaiser could hardly have fou another independent aircraft manufacturer who had more to offer than Fleetwings, Inc., which he is purchasing. First, Fleetwings is stro on aeronautical engineering staff and experience, which Kaiser's firm does not have. Second, the Pennsylvania company gives Kaiser going concern, of excellent reputation and management, which is turn out complete aircraft for the Army. Third, Fleetwings is deeply e grossed in production not only of its own planes, but tricky plane con surfaces which not even a production-minded shipbuilder can sta turning out overnight. And President Frank de Ganahl's own words November sum it up: "This company (after the war) will have a co pletely rounded experience in aircraft of all types, in all departments design, engineering, production—in *stainless steel*, aluminum alloys and *wood*." If any more need be said, it's that Kaiser is the West Coast only *steel* producer, and his cargo planes will be mainly of *wood*.

Higgins-Jouett-China: A dispatch from Chungking a few da ago gave further basis for hunches in the aircraft industry that perha canny Andrew Higgins is making bigger aviation plans than he has be given credit for. The dispatch revealed that in a new book soon be published Chiang Kai-shek will recommend construction of 20,00 transport planes as part of a 10 year reconstruction program for China after the Armistice. Who do you think might build those planes? A little research reveals that Higgins had conferences several months ago with T. Soong, Chinese banker, and Stanley Shen and K. H. Tec Chinese defense supply experts. Not long afterward Higgins dropped a hint that "Higgins products" will be built in China "during and after the war." And do not forget that Col. John Jouett, former Aero Chamber chief and now on Higgins' staff, organized the original Chinese air force in the early '30s and was aviation adviser to the Chinese Republic from 1932 to 1935. Other aviation pioneers with Jouett on the New Orlean roster are Harry Atwood, Guiseppe Bellanca and Enea Bossi.

State's Caribbean Muddle: Officials of airlines which sponded to the invitation of Civil Aeronautics Board last summer apply for Caribbean routes are smouldering at the delay in the gover ment's decision. It is estimated that at least $50,000 in legal and o expenses were incurred by all participants, who took the Board's that the need for additional service in that area was urgent. Actua it was A. A. Berle, Jr., Assistant Secretary of State, who stirred Board to call for applications. Subsequently, State—where wide dif ences of opinion on international air transport exist—reversed itself, ing CAB holding the bag and taking the rap from the industry. It understood on best authority that CAB reached its own decisions, sen them to the White House for approval. As is customary, the State De was requested to submit recommendations.

Here the whole project bogged down. Berle was for a liberal po but other officials were not. What State has suggested, if anything, is known generally, but there is reason to believe the White House force a move in the near future. In the meantime, the "emergency" been forgotten, although airline applicants still are out attorney's Washington people note that if CAB had authority on foreign air rou such interdepartmental strife and confusion could be minimized.

NATS Expansion: Although the Army's Air Transport Comm has had the lion's share of the publicity spotlight, the Naval Air Transp Service moves ahead quietly and there are indications it is readying expansion program which will not only step up its present service dovetail into our commercial airline needs after the war. Details a be published but at least one big $10,000,000 station is contemplated, six existing stations slated for $30,000,000 expansion. (American Ex Airlines is now operating one charter service for NATS somewhere the Atlantic).

Washington Sidelights: OWI is said to be making anot effort to take over Army and Navy press release functions . . . Ziff-D Publishing Co. is taken with the idea of starting some more avi papers . . . Aircraft officials slip in and out of Washington as qu as possible these days so Capitol Hill committees can't take va time for a long-winded hearing on the latest investigation . . . Air have a surplus of pilots for their Army cargo services but AAF cou to promise more planes.

ROBERT H. WOO

Training the CLIPPER PILOTS

with JACOBS AIRCRAFT Engines

Long before the day when he took the controls of this huge skyliner, the Clipper Pilot served an apprenticeship exacting in the extreme—an apprenticeship of countless hours aloft, under every conceivable condition, flying mostly "on instruments."

This comprehensive training requires Training Planes powered by the most reliable of engines.

Pan American Airways Clipper Pilots—like our Army Bomber Pilots—are schooled in twin-engine Trainers powered by JACOBS.

Pan American Airways Jacobs-powered Cessna.

JACOBS AIRCRAFT ENGINE CO.

POTTSTOWN · PENNSYLVANIA · U·S·A·

Editorial

(Continued from page 1)

in these days the Senators are thinking in realistic terms and of capable men of stable judgment and proper vision and perspective.

As an indication of the thinking going on in Senate cloakrooms, here are some of the names being discussed for places on such an advisory group:

Secretary of State Cordell Hull. Senators are weary of battling State Department subordinates, weary of internal factions, want the top man whose confidential diplomatic facts can be made available.

Herbert Hoover. The former President is still highly regarded for his broad knowledge regarding post-war world-wide rehabilitation. Senators believe Hoover could contribute much at this time.

General George C. Marshall. A man of high military rank is obviously necessary, but the Senators would be satisfied with a man of high rank designated by Gen. Marshall.

Admiral Ernest J. King. Here again, a high man of naval rank would be satisfactory if the designation were made by Admiral King.

John M. Franklin. A man of vast shipping experience, now serving in the Army, but who could contribute much knowledge in general global transportation economics.

Archbishop Francis J. Spellman. Senators aren't agreed on a single church prelate, but need an outstanding church diplomat with world-wide connections or affiliations to contribute social and religious viewpoint. Archbishop Spellman's name has been most frequently discussed because of his recent mission to the Vatican.

Howard Hughes. Senators have been intrigued by this multi-millionaire who has flown around the world in his own plane, set air speed records, owns his own aircraft factory, and largely owns one of the nation's outstanding airlines now flying a vast over-water network for the Army. Little is known of Hughes in the Senate, but inklings of his post-war ideas have seeped through to some quarters.

A. A. Priester. Operating engineer of the world's most experienced international airline, highly regarded by operating engineers of airlines, a quiet publicity-shy Dutchman who has been the mainstay for 15 years of the chief U. S. international air carrier. A shrewd and experienced judge of equipment and international operating problems.

W. A. Patterson. Head of one of the world's top and most experienced airlines, long-time student of air transport management economics and one of the nation's new progressive and social-minded executives.

Dr. George W. Lewis. Director of aeronautical research of the National Advisory Committee for Aeronautics, an expert and authority in international scientific competition with regard to aircraft, engines and other equipment. A vast background of world aeronautical research.

Ralph S. Damon. Head of an aircraft manufacturing organization who has had first-hand knowledge of operating problems, a production and operating engineer with knowledge of public requirements and one of the industry's stable thinkers.

These are the type and caliber of men being discussed in the Senate's reborn concern with national and international problems, men who constitute executive, scientific, humanitarian and social leadership of America. In contrast to this group is the interdepartmental committee composed largely of men out of touch with the nation's problems and with the pulse of the people's thinking. Only one man in the entire government group could be considered realistic and experienced in operating fundamentals, Col. Harold Harris, of the Air Transport Command, whose pioneering of aviation on the west coast of South America provide him with a valuable background.

The leadership demonstrated by Senator George in fostering his resolution is a healthy sign. Out of such leadership will come a truly American pattern for the future.

No Second Front?

UNCLE Joe Stalin can be excused for the just pride he takes in pushing the Germans westward in Russia, but his recent utterings pointing out the lack of a second front in western Europe leave something to be desired. There *has* been a second front and it has been effective. The Royal Air Force has not only kept many squadrons of Nazi fighter planes tied down in western Europe, but it has destroyed untold sources of supply in the Ruhr and along the port areas of northern Germany. The RAF can rightfully take credit for thwarting the flow of supplies to the northern front in Russia by destroying vast areas of factories, docks, transportation centers, and homes of workers. Without this second front of the air, Russia might not have found the westward push so easy, might actually last year have found the Nazis running over much wider areas in its country. The lack of a challenge to Stalin's statement in high quarters in Washington and London, by pointing out the existence of a very active air front, again emphasizes the lack of recognition of air power in high places. Some day the tremendous results to date of the RAF will be realized.

A Sound Trouncing

THE House of Representatives will have no standing committee on civil aviation. Old-timers were not surprised by the vote. A frank post-mortem would merely reiterate a truism from 'way back, that canny oldsters in the House can rarely be overcome by newer and less experienced mmbers. And, frankly, we're quite pleased to know that aviation remains in the hands of an experienced and able leader such as Representative Clarence Lea, whose Interstate and Foreign Commerce Committee has shown through the years that it can handle aviation matters capably. We believe aviation has gained, not lost, because of the defeat for a special committee.

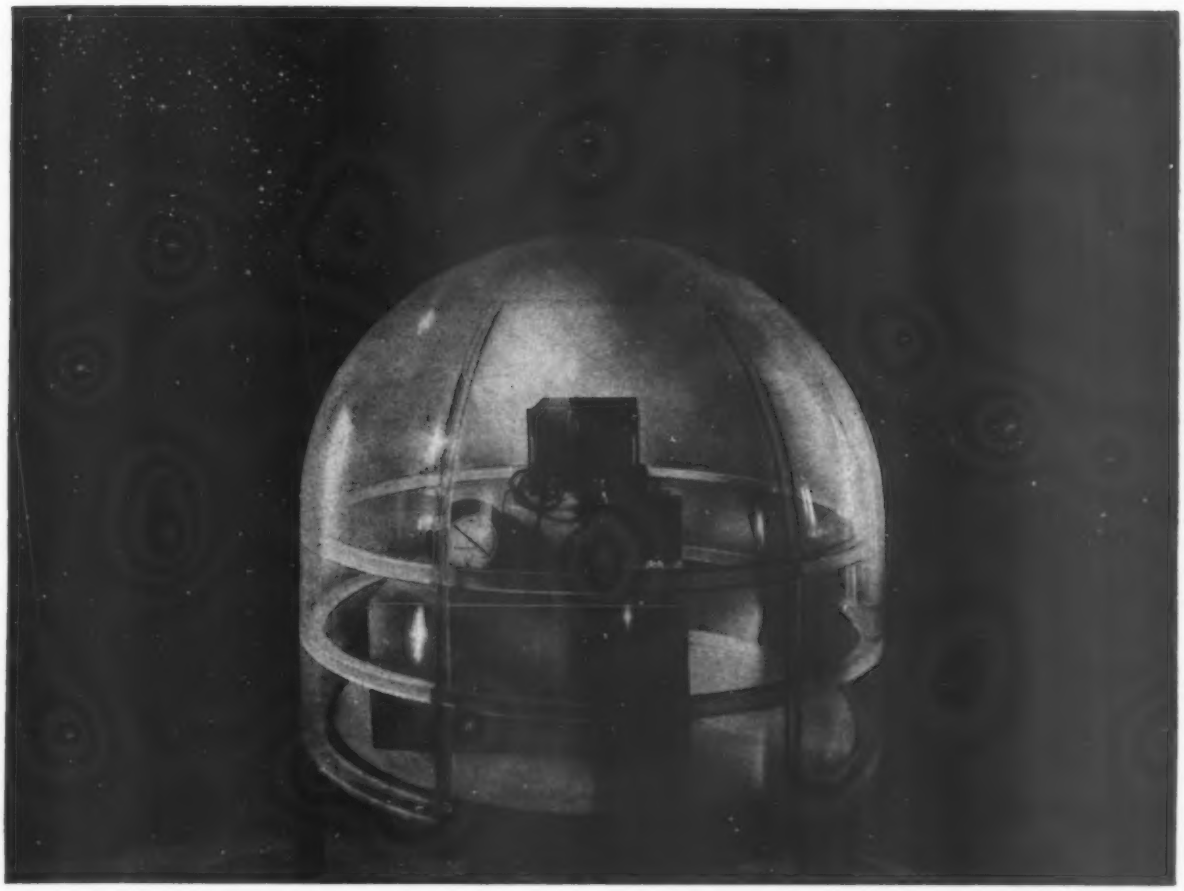
The Right Approach

OUR medal of honor for the best advertisement to appear to date on post-war private aviation goes to Aircooled Motors Corporation of Syracuse for the full-page ad for Franklin aircraft engines in the Feb. 15 *American Aviation.* It was merely entitled, "I See the Browns' Have A New Plane . . . ," picturing a man looking out into his neighbor's backyard where a novel looking contraption, obviously of the helicopter type, is gently rising from what would now be an automobile parking plot next to the family garage. It was strikingly effective —and realistic. In contrast to more visionary (and mysterious) portrayals attempted by components of the industry, the Aircooled ad was a clear and understandable answer to the layman's question of "How can *I* use an airplane?" If Aircooled will make up reproductions suitable for framing, we'll guarantee a prominent place to one on our office wall as a valuable pioneer print of the great era to come.

A Natural Concern

MUCH has been said in Congress recently about British post-war competition. Mrs. Clare Boothe Luce took up pages of *The Congressional Record* at taxpayers' expense to reprint

(Turn to page 10)



ALTITUDE: 40,000 FEET

Inside this new RCA plastic altitude chamber, aircraft radio equipment is taking a ride at 40,000 feet. As the pressure drops inside the sealed, transparent walls, expert eyes observe every part of the radio mechanism. Defects in design, details of faulty construction that would remain hidden until actual high-altitude flights, can be noticed at a glance *right on the ground*—and corrected *before* the radio is installed in a plane.

For pilots it means greater safety, better performance, *dependability*—where failure of the radio equipment might mean difficulty for a courageous crew.

RCA's new all-plastic test chamber represents another step forward in aviation radio research. Because it is entirely transparent—it enables engineers to study the *whole* set at once, to check for high altitude flash-overs and leaks at the same time, to look for tuning shifts and "breathing" parts in the set simultaneously.

This most advanced of high-altitude test chambers is typical of RCA's many facilities for aviation radio research. Today that research has but one goal—to help make America's armed might in the air the most powerful and effective flying force in the world. From that war-time research will come the knowledge, the skills, and the technique that will help *keep* America's wings the mightiest and most useful known to man.

RCA AVIATION RADIO

RCA Victor Division • **RADIO CORPORATION OF AMERICA** • Camden, N. J.

"Baby" is no bigger than your little finger. "Daddy" is nearly five feet tall.

There are all sizes and shapes in this remarkable family . . . fat ones, thin ones . . . light ones, heavy ones.

* * *

These are high-pressure cylinders for holding gases and liquids. One member of the family helped save the life of Eddie Rickenbacker by inflating his rubber raft. Others provide oxygen for stratosphere flyers. Still others put out fires.

* * *

Today high pressure gases are being put to work in hundreds of interesting ways. An outstanding pioneer in this field, Walter Kidde & Company is constantly developing new types of valves, cylinders, and containers to meet the expanding needs of our wartime industry.

Due to increased production, we can promptly fill orders for Kidde pressure cylinders.

* * *

After the war, high pressure gases will play an important part in the more efficient, more productive industry of the future. Perhaps *now* is the time to get in touch with our research and development department. Write: Walter Kidde & Company, 339 West Street, Bloomfield, N. J.

PROTECTS LIVES

Kidde

HIGH PRESSURE GASES • FIRE PROTECTION

Editorial

(Continued from page 8)

reams of debate in the House of Commons, intending to over the point that the British were out to sell the U. S. d the river. Evidently Mrs. Luce thought few Congressmen wo take the trouble to read pages of fine print. No doubt she correct. But *we* did read the House of Commons debate for the like of us we can't see anything in it to get disturb about. Why shouldn't the British be concerned, with a handful of transport airplanes and most of those obtain through Lend-Lease from us? It seems to us perfectly natur for the British to start thinking about post-war internatio aviation. Britain *should* start thinking and debating. But wh wrong with that? We looked high and low for the boogie-m without success. Meantime we don't think Mrs. Luce help matters by stirring up an international scene without hav something more constructive to say than appeared in h now-famous speech.

Excellent Choice

ELECTION of James P. Murray, vice-president and Wa ington representative of Boeing Aircraft Company, as pre dent of the streamlined Aeronautical Chamber of Commer is a compliment to the wisdom of the electors and a mark recognition to one of aviation's ablest and most seasoned v erans. A better choice could not have been made. Jim Murr made his early mark as an air mail pilot in the far west, h been the dean of Washington manufacturing representatives f years. A quiet, sound, and effective worker, he commands th respect of everyone in the industry. Perhaps the finest com ment that can be made about Jim Murray is one we'd all lik to have said about ourselves, but which so few of us reall deserve in the final analysis, and that is: he's a gentlema

Justified Protest

THE smaller airlines have joined together to protest again the Civil Aeronautic Board's proposal to place them on th same basis as the larger companies with regard to air mail pay ments. This is a wise move. Surely the wiser heads in th CAB will not foist upon the smaller lines a rule of measur which obviously does not apply. Problems of major and se ondary lines are at wide variance. So should be the measur ment of mail pay—and the measurement of encouragement fo future development.

WAYNE W. PARRISH

What Others Say

WASHINGTON POST—"The cause of good government, let alone of aviation, will gain from the vote in the House against the proposal to set up a new standing committee on civil aviation. It was pretty plain from the debate that the advocates of this measure were thinking about the need to protect this country in the dawning era of international transport. Such a need is obvious. But it must be met by the Executive. Under our Constitution the initiative in making treaties and agreements with foreign governments lies with the President. It isn't up to Congress so to adjust its machinery as to make sure that this country is put in a strong competitive position in world airways. Such an attitude would make for government as well as legislative chaos."

WASHINGTON DAILY NEWS—"Many informed persons rate Lieut. Gen. Andrews our ablest airman, so his appointment to command all American forces in the European theater is no surprise. It is a tribute to the man, and to the still mounting importance of air power, that a flyer is chosen for the London job which Eisenhower held . . ."

NEW YORK TIMES—"It is highly encouraging to learn that the Army regards the tests of the latest Sikorsky helicopter model as sufficiently successful to justify it in placing a production order."

You've caused us a lot of inconvenience, Premier General Hideki Tojo. We can't get all the gas we'd like. Rubber is mighty scarce. There's a lot of rationing going on. Taxes are getting a little burdensome. Our boys are away from home. *And we don't like it . . .*

But you did one good thing—you made us build the greatest Air Force in the history of the world. And just to show our appreciation in a large way, we're going to suspend rationing of eggs and send you some nice fresh ones for breakfast—you little so-and-so.

AIRCHOX COMPANY, Division of JOYCE Aviation, INC.

General Offices, 8 So. Michigan Ave., Chicago

MAKERS OF THE WORLD'S FINEST PARACHUTE AND BELT HARDWARE

PERFORMANCE CONTROLS THE AIR

Pesco Pressure-Loaded Hydraulic Gear Pump

Dogfight! Mastery of the air hangs in balance. Swarms of planes and pilots, spinning, diving, climbing, spitting streams of destruction. It's *performance* now or never . . . the craftsmanship of thousands of us here at home is put to the acid test. With lives and battles at stake, we dare not fall short of our responsibility.

In Aircraft Hydraulics, Fuel Pumps, Air Pumps, Related Accessories...

PERFORMANCE POINTS TO Pesco FIRST

DIVISION BORG-WARNER, CLEVELAND, OHIO

XUM

Gulf Super-Quench smashes a bottleneck—

plant ups submachine gun production 100%!

Another example of the greater quenching power of this revolutionary new quenching oil.

Heat treatment of the bolt was the bottleneck in submachine gun manufacture in a large ordnance plant until Gulf Super-Quench was used to quench this part.

To obtain the required surface hardness of Rockwell C-52, it was formerly necessary to carburize the bolt. With Gulf Super-Quench, this hardness is obtained without carburizing, which means a 50% reduction in heat treating time.

In addition, Gulf Super-Quench hardens the bolt through its entire cross section. *Result: bolts of better quality, a 100% increase in production of submachine guns in this plant!*

In plant after plant, this revolutionary new quenching oil is achieving remarkable results. Many parts for the weapons of our armed forces are being made harder and tougher with Gulf Super-Quench than was ever before possible with oil quenching. And yet Gulf Super-Quench has the same minimum tendency towards distortion and cracking that is characteristic only of mineral, fish, and fatty oil quenching media.

Here's the important reason why Gulf Super-Quench is a superior quenching oil: It has *dual action*—a faster cooling rate through the hardening temperature range, and the slow speed of conventional quenching oil below the hardening temperature range.

Gulf engineers are at your service in 30 states from Maine to New Mexico to consult with you on your quenching problems.

FOR VICTORY
BUY
UNITED STATES
WAR BONDS
AND STAMPS

GULF INDUSTRIAL LUBRICATION

Mail This Coupon Today

Gulf Oil Corporation — Gulf Refining Company
3800 Gulf Building, Pittsburgh, Pa. AA

Without obligation, please have a Gulf Service Engineer call to consult with us on our quenching problems.

Name_____

Company_____

Title_____

Address_____

XUM

The singing will never be ended

Nothing can stop it. Not the stark savagery of war . . . the crushing load of oppressed peoples . . . the inhuman cruelties of tyrants . . . even these cannot stop mankind from lifting eyes and voices to the sky . . . where hope for freedom rides the four winds . . . where the song of freedom echoes in the roar of mighty planes.

And out of the fires of total war, in which the stunning, destructive power of the airplane may well prove the decisive factor, the means for a richer, fuller life for victorious Democracy is being forged.

The tragic need that is forcing aviation's swift development, is paving the way to ever broadening horizons in the pattern of our future.

In that brave new tomorrow, millions will know the uplifting joy of flying into a clear blue sky, "on, on, and out of sight." For tomorrow's skies will echo an anthem of hopes fulfilled, rising out of a new communion among peoples . . . a new understanding and universal brotherhood in a world drawn closer through the magic of flight.

Today, and until this war is won, Chicago and Southern planes fly for Uncle Sam and you. Uncle Sam's call on us comes first. To serve him . . . as we strive also to do our part in maintaining the vital transportation system of our country . . . all our energies are bent.

When that task is finished, and victory is finally achieved, we of Chicago and Southern look forward to an era where the music of engines overhead will blend with the rejoicing voices of a world reborn.

CHICAGO and SOUTHERN AIR LINES

The Valley Level Route

CHICAGO • ST. LOUIS • MEMPHIS • JACKSON • NEW ORLEANS • SHREVEPORT • HOUSTON

American Aviation

CAB Demands 10% Passenger Fare Cut

Order Affects 11 Domestic Air Carriers

By Eric Bramley

IN THE first action of its kind by a government aviation agency, the Civil Aeronautics Board on March 4 ordered 11 domestic airlines to show cause why their passenger fares should not be reduced 10%.

The 11 companies affected were American Airlines, Braniff, Chicago & Southern, Delta, Eastern, National, Northwest, Pennsylvania-Central, TWA, United and Western. They were given 15 days in which to file answers to the order.

In almost all major rate cases issued during the past several months, the Board had warned the industry that passenger fares would receive "early consideration." Even with this warning, however, the suddenness with which the order was issued caught many officials by surprise. It is known that some airlines have been studying the situation, and it is felt that, given more time, they might have announced a voluntary reduction.

Others, however, have felt that with costs steadily rising, and with new Army contracts calling for allocation of more expenses to commercial service, increased revenues are necessary to keep the industry on a sound basis.

Profits 'Excessive'

In its show cause order, the Board said that net incomes reported by the 11 respondents during the five months ended Nov. 30, 1942, were "excessive" and added that such incomes "will or may continue to be excessive." In view of this situation passenger fares "are and will be unjust and unreasonable," it asserted.

The public interest "in economic stabilization and price control necessitates the restoration, insofar as consistent with the maintenance of the sound financial condition of the respondents, of the average passenger revenue per revenue passenger mile to the approximate level existing before the elimination by the respondents on July 1, 1942, of all discounts on passenger fares and of all special passenger fares," the Board said.

The discounts which were suspended on last July 1 included those on round trips, on government tickets and on air travel card tickets. Suspension was to have been for the duration of the war and six months thereafter.

It is felt that if the Board's order becomes effective, it will be accomplished by restoring these discounts.

The Board admitted that there are "substantial elements of uncertainty affecting the future revenues and expenses of respondents" and that a "further comprehensive review of the rates . . . should be undertaken, if that action seems to be required at such time as information and data have become available which will permit of a more accurate appraisal of the effect upon respondents of these elements of uncertainty." These elements were listed as (1) uncertainty as to the exact financial effects of new contracts now being negotiated with the War Dept.; (2) absence of adequate information as to applicability of the excess profits tax, and (3) effect upon revenues and unit costs resulting from operation through winter months with a reduced number of aircraft.

In justifying its order, the Board pointed out that although respondents have had less flying equipment since June 1, 1942, the average amount of traffic of all classes during July-November, 1942, was not substantially smaller than the like average for the same 1941 months, "and was greater than the like average for the year ending June 30, 1942, and that the average load of each class of traffic per revenue mile flown during the five months ended Nov. 30, 1942 substantially exceeded the average loads carried during any preceding period."

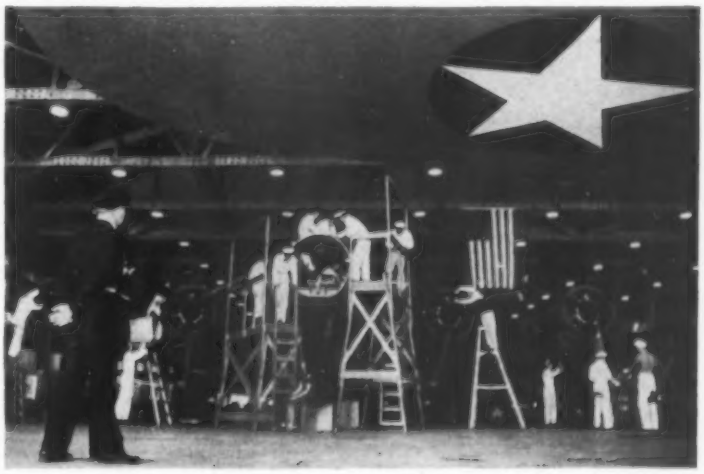
Average passenger revenue per revenue passenger mile for the year ended June 30, 1942, for the month of June, 1942 and for the period July 1-Nov. 30, 1942, was given by CAB as follows: American, 5.04c 5.08c and 5.63c; Braniff, 4.63, 4.82 and 5.15; C&S, 4.62, 4.81 and 5.06; Delta, 4.42, 4.81 and 5.06; Eastern, 5.21, 5.17 and 5.76; National, 4.84, 4.82 and 5.27; Northwest, 4.25, 4.34 and 4.97; PCA, 5.59, 5.83 and 6.06; TWA, 5.06, 4.97 and 5.49; United, 4.93, 4.86 and 5.43, and Western, 4.71, 4.65 and 5.37.

Not affected by the Board's show cause order were Continental Air Lines, Inland, Mid-Continent, Notheast and Hawaiian. A CAB official said it was correct to assume that they had not been included because their profits are not "excessive."

Estimated Airline Profits

If passenger fares should remain at present levels, the 11 airlines affected by the Civil Aeronautics Board's fare reduction show cause order would, according to CAB estimates, realize the following net incomes in the forthcoming year (percent of return on investment, after provision of 40% for Federal income taxes but no provision for excess profits taxes, shown in parentheses):

American	$7,672,790 (35.86%)
Braniff	766,783 (33.07%)
C & S	267,934 (19.01%)
Delta	406,775 (25.96%)
Eastern	4,633,175 (29.12%)
National	379,329 (53.76%)
Northwest	668,995 (34.02%)
PCA	664,407 (19.99%)
TWA	3,745,428 (27.70%)
United	8,345,222 (38.36%)
Western	418,667 (35.83%)



An Airline at War: This is the first picture released showing an airline doing modification work on Army bombers. Taken at United Air Lines' Wyoming base, it shows a four-engined bomber receiving last-minute changes, not possible to handle on aircraft assembly lines. The airlines are also flying Army contract cargo routes, a situation which was considered by CAB in asking a 10% passenger fare reduction on some lines.

Airline is Major China Supply Route, House Group Says

A new report of House Foreign Affairs Committee recommending extension of the lend-lease program, explains the recent statement of the President that "inadequate as they are, lend-lease supplies now being flown into China exceed the amount of lend-lease supplies which were carried over the Burma Road for use in China."

The explanation has been made that during the time the Burma Road was in use a high percentage of the tonnage carried over it in trucks was construction material to build or maintain the road itself, thus cutting down the available loads of war materials.

"At the present time," the report says, "the only goods reaching China in quantity are flown in by air. So desperate is the transportation problem that stock piles of lend-lease goods by far exceed the capacity of available transportation to bring in the goods."

At a recent session of the Senate Foreign Affairs Committee, Lend-Lease Administrator Edward Stettinius said that "about half of all lend-lease supplies for China shipped from the U. S. are now in India. Until more planes are available, and more gasoline can be carried into China for their return trips, our supplies for China will continue to be restricted," he added.

Canadian Treaty Renewed

The U. S. and Canada have agreed to continue in force till the Armistice a 1940 arrangement allocating air routes on a reciprocal basis.

XUM

Bomber-to-Freighter Conversion Unlikely

Plan Now, and Let Post-War Manufacturers Build 'Honest-to-Goodness' Air Cargo Planes, Sheehan Urges

By MAJ. WILLIAM M. SHEEHAN

(Maj. Sheehan, who was one of the first U. S. advocates of the use of sky trucks, is now chief of the air section of Army Air Forces' traffic and transportation division. Before joining the AAF he did extensive air cargo research in South America for Pan American-Grace Airways, after which the company opened an all-cargo service. In early 1941 he wrote in AMERICAN AVIATION *one of the first series of articles to appear on "sky-trucking.")*

THE Flying Jennies all over again. That's the wishful thinking of opportunists who look for air freight to boom on plentiful military aircraft hand-me-downs after this war. But it simply won't happen that way and it's a good thing for the promising future of air cargo that it won't.

It won't happen because the situation now differs from that at the end of the First World War as night from day.

Maj. Sheehan

Then, there was no real aviation industry. We had just a few airplanes, probably no more than seven or eight thousand unreliable craft of the strut and wire variety, built to birdcage specifications—that is, if a bird let loose between the wings could escape, more wire had to be added. Airplanes then were for fighting. But the war was over. Why should men be trained to fly when there would be no more fighting. . . . So, sell the white elephants to the barnstormers, and let them risk their fool necks. Of course, they couldn't pay much for them, but it was better than scrapping them.

That was 1918, the year the Post Office Department found a use for five airplanes by establishing an air mail route from New York to Washington.

Now we talk in terms of tens of thousands of airplanes—of an annual productive capacity of more than 100,000. Still we are not likely to have planes to give away at war's end.

Each day brings the Allied powers closer to an all-out bombardment of Axis nations. This eventually cannot help but deplete our supply of equipment.

Today the war is on a truly world-wide scale. Flames of battle burn in every area—Alaska, the Solomons, Tunisia, Burma, Russia—and in all the oceans. With such wide-spread activity, the war cannot end in a day. Patrol of these widely scattered zones must continue for many months after formal cessation of hostilities. Certainly, by that time, attempts at patrol by surface means will have given way to the long reach of air power.

Moreover, there is a growing feeling that permanent peace can be assured only through armed preparedness—preparedness in air power—a strong offensive might of long-ranging bombers supported by the speed and versatility of air transport.

These factors, then, depletion of equipment, need of patrol, and armed preparedness, leave the flooding of the aircraft market by the armed services a most remote possibility.

But if there should be so great a surplus of equipment that the government would want to divest itself of planes, what then would be the chances for the bargain hunters?

One eventuality might be the releasing of war planes under construction. Common sense would seem to indicate that the price for these new planes would have to be maintained to protect the manufacturers' post-war markets; it would certainly be no "dime-a-dozen" sale.

The other possibility is that the Services might unload used equipment, replacing their own with new. Should this happen, the price of the second-hand equipment would, admittedly, be low; but costs of maintaining aircraft that have been operated under combat conditions, where every rule of caution and safety is stretched toward the breaking point, will certainly not be moderate.

Let's by-pass all of the foregoing and assume that these B-17s, B-24s and the like (or their counterparts at that future time) are available for some such figure as "dime-a-dozen", even free. How would their use effect air cargo operations?

First, let's consider the mission of a bomber. It was designed for only one purpose: to carry a heavy load of destruction a maximum distance at a high speed.

An important thing about bombs is that they represent a large mass condensed into the least possible size. The bomber is designed in accordance with this fact by being built to just fit around the bomb load, with as little structure as possible left over. In fact, a good part of the fuselage serves only the purpose of extending the empennage far enough back to provide stability and control.

Cargo is Bulky

Air freight loads, on the contrary, judging from shipments now moving by air express, rail express, truck or boxcar, are bulky. Space must be available to accommodate an odd and amazing multitude of shapes.

The bomber takes advantage of the load-dropping nature of its mission by concentrating this load close to the airplane's center of gravity, so that, once relieved of its burden, the plane suffers the least possible change in longitudinal balance. In commercial freight operations loads must be spread about to permit handling in flight, segregation by destinations, etc. The bomber has neither need nor room for general cargo, nor balance adjustment to control it.

The bomber is designed for long non-stop flights in order to reach deep into enemy territory. This involves tremendous fuel loads, a feature not desired in air freight operations where frequent stops are both possible and necessary to its primary function of service.

The future of air freight rests squarely upon the same principle that underlies other kind of freight transportation, viz.: a large volume of activity on relatively low rates. Huge profits are unlikely—the government through regulation and taxes will see to that—so operating costs must be held down. Otherwise the business, like pre-war Air Express, will have an emergency or luxury character—and *that is not air freight.*

Bombers Costly

The man with the "dime-a-dozen" idea is in for serious trouble when his operating costs, even with low depreciation charges resulting from low initial cost of equipment, crowd out profits and show profit and loss statements in red ink. For bombers aren't intended to operate economically. They are meant "to get there first". Scant consideration is given operating costs in their design.

For that matter, design engineers of our commercial transports cannot brag about economy, either. For, like the bombers, commercial planes have been built for speed and speed and economy just don't mix. You can have one, or the other, but not both.

It is interesting to note the trend of aircraft design during the past decade. (See Table of Trends in Air Transport Design.) Each new step through Boeing, DC-2, DC-3, Stratoliner, Constellation has shown a marked increase in size, and speed, but no appreciable increase

(Continued on page 32)

TABLE OF TRENDS IN AIR TRANSPORT DESIGN

Manufacturer	Model	Name	Military	Year	Engines	Source of Information	Based Upon	Gross Weight	Useful Load	Cruising Speed	Percent of Gross Useful Load
Ford	5 AT-C	Trimotor	——	1929	3	C.A.A.	Usage	14.000	5.765	130	41%
Boeing	247-D	Transport	(C-73)	1932	2	C.A.A.	Usage	14.000	5.060	160	36%
Douglas	DC-2	Skyliner	(C-32)	1934	2	C.A.A.	Usage	18.560	6.480	170	34%
Douglas	DC-3	Flagship	(C-53)	1936	2	A.A.F.	Usage	25.200	8.854	180	35%
Boeing	307	Stratoliner	(C-75)	1939	4	Janes	Mfg. Reports	45.000	15.000	215	33%
Curtiss-Wright	CW-20	Commando	(C-46)	1940	2	C-W	Mfg. Reports	45.000	19.425	217	43%
Douglas	DC-4A	Skymaster	(C-54)	1941	4	AAF	Design Spec	52.000	15.574	242	30%
Consolidated	Converted	Liberator	(C-87)	1942	4	AAF	Design Spec	52.000	16.347	250	32%
Lockheed	——	Constellation	(C-69)	1943	4	Lockheed	Mfg. Reports	74.000	*	287	*

NOTES: * Because of confidential nature of information regarding the Constellation, these figures are not included.
AAF credited information is probably based on normal operation, not on overloaded conditions, and are therefore considered as credible figures such as might be used in commercial operation.

It is interesting to note from the above tables, that, while gross weights and speeds have steadily increased in model after model, the maximum increase in efficiency of load carrying ability has gone up only 2%, and on only one model plane, while the general trend has been downward. In other words, efficiency has remained stagnant and has been sacrificed to more than doubled speed, while gross weights have increased nearly five times.

House Turns Down Aviation Committee By 256-142 Vote

By KATHERINE E. JOHNSEN

BY AN unexpected margin of 114 votes, the House March 2 defeated the Nichols resolution to establish a standing committee on civil and commercial aviation, following a plea by Speaker Sam Rayburn (D., Tex.) "not to change horses in mid-stream."

"If there was ever a reason for the formation of a separate committee, that should be taken up at some other time," Rayburn pleaded.

The vote was 256 to 142. The large number of Republicans out of line with their Leader, Joseph Martin (R., Mass.), who adopted the new committee as a Republican platform, came as a surprise.

"We have the best aviation laws in the world and the best civil aviation set-up of any country on the face of the earth," Rayburn stated. "What has the great Committee on Interstate and Foreign Commerce done or failed to do that it should have this seeming repudiation at this time by the House of Representatives?"

Rayburn served on Interstate and Foreign Commerce for 24 years, six years as its chairman.

Martin Favors

Arguing for the establishment of the new committee, Martin said "this proposal must not be considered as any reflection upon the Interstate and Foreign Commerce Committee . . . (but) I believe civil aviation is of sufficient importance to the people to dignify it with a committee to deal exclusively with its problems."

"The Government has lagged behind in giving aviation the proper encouragement," he charged.

"When this war is over, millions of boys will come back, devotees of aviation and air travel. Air bases will dot every part of the globe. The value of air passenger and cargo transportation will be enormously increased," Martin told the House.

"The bureaucrats will be ready with their post-war aviation plans. They have them now resting in their desks. . . . The House can have a voice if we have the plans and a committee which through study shall include many members who will become specialists in this particular field."

Small Budget

In the opening speech urging the committee's creation, Rep. Jennings Randolph (D., W. Va.) said "the total national budget for all aviation, military, naval, and civil, for a 20 year period following the last war, was less than $3,000,000,000, about one-sixth of the public cigarette bill."

Other points made by Randolph in support of a change in the legislative set-up for commercial aviation were: (1) when war broke out we had "not a single aircraft capable of holding its own in a war sky;" (2) our domestic lines combined owned but 360 aircraft and operated a route mileage of less than 37,000 miles; (3) although a report on the necessity for a national airport system was made to the Congress 10 years ago, nothing was done to develop it until war forced the issue; (4) the several thousands of airports listed by the Civil Aeronautics Administration were "in the vast majority of cases barely more than glorified cow pastures;" (5) for 20 years we turned out less than 300 military pilots per year and we did nothing for civil pilot training.

Best Aviation

Contradicting the spirit of Randolph's remarks, Chairman Clarence Lea (D., Cal.) of Interstate and Foreign Commerce told the House membership that "America now has the best commercial aviation the world has ever known."

Regarding the contribution of commercial aviation to the war, Lea called attention to "the fact that the airlines of this country contributed 515 air transport planes to the military service of this and our allied countries." When war began, 169 of these planes then under contract with the manufacturers of this country were delivered over to war purposes, Lea remarked.

Rep. Clare Boothe Luce who focused public attention on the proposition of a standing aviation committee with her maiden speech in the House, did not participate in debate on the decisive day, but merely answered "aye" to the vote-call on the Nichols resolution. Rep. Will Rogers (D., Cal.), son of the famous humorist killed in an air flight to Alaska with Wiley Post, also voted for the new committee.

Vinson Opposes

Chairman Carl Vinson (D., Ga.) of Naval Affairs lead in the opposition to the new committee, but Naval Affairs' ranking minority member, Rep. Melvin Maas (R., Minn.), made a fiery speech urging its creation.

"Before the war in Europe, the Congress of the U. S. was the only major legislative body in the world that did not have a standing committee on civil aeronautics," Maas pointed out.

Aviation needs entirely different treatment than other forms of transportation, he contended. "Aviation must not be held down, choked off, and regulated to impotence in the U. S. while it is being fostered, encouraged, subsidized, and pushed everywhere else in the world," Mass exclaimed, continuing:

Fought for Airports

"Other wars have been fought for seaports. This war is being fought for airports, throughout the whole world."

Author of the resolution to establish the new committee, Rep. Jack Nichols (D., Okla.), made only a brief statement on the voting day, in the main urging that personalities not be a deciding factor and announcing "once and for all" that he would not be a candidate for chairmanship.

Other participants in the debate over the standing aviation committee were:

Rep. Charles Wolverton (R., N. J.), ranking minority member of Interstate and Foreign Commerce, who claimed there is no reason for switching jurisdiction over commercial aviation to a new committee and many reasons why it should not be switched;

Rep. Everett Dirksen (R., Ill.), member of the Nichols Air Accident Committee, who argued that the new committee is essential to plan for post-war aviation employment problems;

Rep. Luther Johnson (D., Tex.), ranking member of Foreign Affairs, who contended that air policy is not a separate problem, that in its foreign aspects, it is an integral element of our whole foreign policy.

'Tied Down'

Rep. John Vorys (R., Ohio), a flyer for 27 years and Ohio's first Director of Aeronautics, who pointed out that aviation should be considered by a separate committee because "whenever the control of aviation has been tied up to something else, it has been tied down;"

Rep. Thomas Winter (R., Kan.), flyer, and new member of Interstate and Foreign Commerce, who remarked that our aviation laws today are the "best" . . . therefore maintain the status quo;

Rep. Joseph O'Hara (R., Minn.) who said Congress needs fewer committees, not more.

Senators Visit Republic: Members of the special Senate committee investigating the national defense program recently visited the Republic Aviation Corp. plant, and praised increased production rates. Shown, left to right, are Alfred Marchev, Republic vice president and general manager; Sen. Homer Ferguson of Michigan; Sen. Mon C. Wallgren, Washington, chairman of the sub-committee on aircraft; Sen. Carl A. Hatch of New Mexico; Sen. Joseph H. Ball of Minnesota; Hugh Fulton, committee counsel; Sen. Ralph Brewster of Maine, and Lieut. Col. T. A. Murphy, Army resident representative at the plant.

Congressmen See Willow Run Plant

Some congressmen and Senators who visited Ford's Willow Run plant in the past fortnight returned to Washington enthusiastic Ford Boosters, and explaining why plane production there has lagged.

But members of the more realistic Truman Committee, while crediting the plant with considerable improvement, particularly in the past month, admitted that they are not satisfied with its performance.

On the House floor, Rep. Arends (R., Ill.) decried critics of Willow Run. "I am not at liberty to disclose what the production records are to date. Suffice to state that over the period of the last few months, on a percentage basis, the increase in production is good. Such increases are expected to continue to the end that the objective goals will be met sooner than many might suppose," Arends stated.

Members of the Truman subcommittee headed by Sen. Wallgren (D., Wash.), after a visit to Willow Run, concluded that the two main factors in holding up production are: (1) manpower problems, such as the training of workers and their transportation; (2) too-frequent changes in military specifications for planes, much harder to execute on the mass-production line than in the standard aircraft assembly plant.

Truman committeemen are following developments closely, and plan questioning Army and Navy officials on constant specification changes.

Lovett Calls Bismarck Sea Battle Greatest Feat of Land Based Planes

ARMY public relations for the first time on Mar. 5 allowed a blow by blow battle description to be told when Assistant Secretary for Air Robert Lovett and a group of Army Air Intelligence officers diagrammed action of the great Bismarck Sea battle of Mar. 2-4, in which an entire 22 ship Jap convoy was annihilated.

Only technical details, such as the number of planes involved in each flight and altitudes at which hits were scored, were withheld for obvious security reasons. Lovett said the opportunity to try out air technique in this battle was as near the equivalent of a football coach's dream as he could imagine.

He and Maj. Gen. George Stratemeyer, present to represent Lt. Gen. H. H. Arnold, AAF Commanding General, gave full credit for the operational planning and execution to Lt. Gen. George C. Kenney, commander of Allied Air Forces in the Southwest Pacific theater.

The Battle of the Bismarck Sea is the finest example of land based aircraft going out as a team in offensive action against enemy aircraft and surface vessels during this war. Mr. Lovett described it as: "coordinated, massed, continuous air attack."

All the aircraft used in the enterprise were American designed and built with the exception of a few Australian Beaufort fighters which assisted in strafing and one Australian Catalina Reconnaissance plane which made two sorties during the fray. American pilots and crew manned the American built ships.

A break-down of the 95 Zeros either shot down or listed as probables during the three days of the battle, lists the bag for Mar. 2 as 13 Jap planes, for Mar. 3 as 55 Jap planes and for Mar. 4 as four planes over the convoy, 17 in the air over Lae and six on the ground refueling, making a total for that day of 27.

One Bomber Lost

Incredibly, our own losses during that period amounted to one bomber with a crew of nine men and three single seater fighters. All U. S. losses occurred on Mar. 3.

In addition to the 95 Jap Zeros destroyed, 22 ships, cruisers, destroyers, cargo and transport ships were sunk with an estimated 15,000 troops aboard.

The convoy, heavily protected by an umbrella of Jap fighter planes, was sighted Mar. 2 and several waves of heavy bombers, mostly B-17s but including a few B-24s, swept over and scored many direct hits and near misses, leaving the convoy in a scattered condition. Allowing the Japs no respite more and more heavy bombers were sent in striking forces.

Bombers pounded at the convoy all through the night, and the next day when the weather improved steady waves of heavy bombers, medium bombers (B-25s) and light bombers (A-20s) systematically destroyed the convoy and any landing barges they could find.

On the first day P-38 long range fighters were used as fighters and also for bombing. Meanwhile the Royal Australian Air Force strafed the ships and airdromes in the vicinity which were also being bombed to prevent Jap fighters from taking to the air. The second day P-40 fighter planes were used in the battle.

'You Get Dividends'

In the three or four other offensives Gen. Kenney has staged against enemy convoys he used various parts of the final strategy employed so successfully at the Battle of the Bismarck Sea which ranks with the Battle of Britain and the Battle of Midway as an experimental battle, it was emphasized. Mr. Lovett pointed out that "if you use air properly you get dividends."

During all the fighting, especially the first day, our planes fought extremely heavy anti-aircraft fire. Mr. Lovett was not willing to indicate at what altitudes the bombings and fighting proved most effective, but said the action took place at all altitudes while the bombings were done from "low and medium altitudes."

New York Times.

Army-Navy Petroleum Board Established

Establishment of the Army-Navy Petroleum Board has been made known to Congressional sources by the Navy, which reported that Capt. A. F. Carter is its chief representative on the Board. Capt. Carter is on duty in the Office of Naval Operations, in Washington. Army members have not been divulged.

Although organized originally in July 1942, the Board was only made an agency of the Joint Chiefs of Staff in the last 30 days. Details of the Board's work are secret, but it is known that many problems connected with the augmented production of aviation gasoline and its transportation are major matters under almost daily discussion.

Patterson Hails Air Battle; February Plane Output Up

Army and Navy air strength received high praise from Under Secretary of War Robert Patterson who estimated that the score for Gen. Douglas MacArthur's flyers was 16 to 1 in the New Guinea battle of March 3.

Mr. Patterson told a press conference March 4 that the offensive was waged entirely by air against Jap planes and surface vessels. Referring to one of the few battles in the war to be won entirely by air, he said: "It does show the excellent work being done by aircraft—both Army and Navy. It is an indication of what aircraft can do and the increasingly important part they are going to play in this war."

Airplane production was "considerably larger in February than in January," Patterson said, or about 5,500 planes. In revealing this figure he was referring to a War Department press release which announced production by American industry in January, including approximately 5,000 airplanes, "of which more than 65% were of combat type."

Included with the January production figures were "more than 70,000 aircraft bombs of 1,000 pound size or larger . . . at the rate of 2,300 a day for 30 days."

"Procurement of equipment for ground and air forces has been steadily climbing at an average rate of nearly $100,000,000 a month for the past year. Production for January, 1943, was 3½ times the rate of January, 1942. Although somewhat below the production of December, 1942, as a result of anticipated fluctuations caused by year-end adjustments, January was nevertheless in line with the scheduled long-term upward trend," the War Department stated.

During January 27,000 .50 caliber aircraft machine guns, 7,000 20 mm. aircraft cannon and more than 37,000,000 square feet of metal landing mats for air fields were produced by industry.

C-87 Flies Itself for 2,000 Miles

An Army Consolidated C-87 cargo plane which flew for about 2,000 miles over the Atlantic and Gulf of Mexico without human occupants before it crashed without fuel in Northern Mexico was the subject of a special War Dept. announcement late in March.

The plane, carrying a crew of six and two passengers, became unmanageable from tail flutter shortly after leaving the Florida coast about midnight of Feb. 19, and the crew bailed out. Two men were lost. Others were rescued by the Coast Guard.

Eighty miles out from Florida the flutter developed, at 9,000 ft. The ship began losing altitude. When it reached 5,300 ft., Lt. R. C. Ulmer ordered the cargo thrown overboard. Since this did not help, the pilot turned the plane back toward land. When they believed they were over Florida again, all occupants jumped, after the pilot set the automatic pilot for the northeast, which would give it the longest trip over water. They landed in shallow coastal waters.

Shortly after noon the next day Mexican officials reported a C-87 had crashed in the northern mountains, which gave the Air Transport Command several hours of puzzlement because no such plane should have been within hundreds of miles of that area. Investigation of serial numbers, however, finally established identity of the plane.

RAF Courses Finished

More than 4,000 RAF pilots had been trained in four U. S. AAF training schools when final graduation ceremonies were held recently, British Information Services has announced. Under this plan, suggested by Lt. Gen. H. H. Arnold, Commanding General, AAF, and in operation since June 8, 1941, 13 separate courses have been completed. Of the graduates, 25% have been commissioned and 13% retained as instructors for the U. S. AAF. In five British schools in the United States, pilots for both the RAF and U. S. AAF will be trained in the future.

Chicago Tribune

House Committee Named to Study Acquisition of Pacific Naval Bases

A NEW subcommittee of House Naval Affairs, headed by Rep. Warren Magnuson (D., Wash.), is already studying, in collaboration with the Navy Department, the possibilities in recent suggestions of Secretary Knox that the U. S. should have post-war air and sea dominance in the Pacific.

Other members of the subcommittee are: Rep. Lyndon Johnson (D., Tex.); Rep. Lansdale Sasscer (D., Md.); Rep. W. Sterling Cole (R., N. Y.); and Rep. James Mott (R., Ore.).

The location of our Naval bases in the Pacific, of course, are and will continue to be determined by war necessity, but they also form potential "stepping stones" for the post-war commercial air routes to the Orient, across the Pacific and down from Alaska, Magnuson commented in an interview with *American Aviation*.

The bulk of the Pacific bases—some ship, some air, some joint Army-Navy enterprises—have been built with our money and personnel, he remarked, but in many cases, on islands that belong to other countries—France, Australia, New Zealand, England, Holland—joint arrangements will have to be made with these countries and lease purchases transacted.

On Unclaimed Islands

"In addition to the bases constructed on friendly territory, many of our bases in the Pacific in the post-war era will be on islands now held by the Japanese, but which we expect to take, and in still other cases the bases are and will be constructed on unclaimed islands," he pointed out.

The Navy's intense interest stems from its assumption that if and when we win the war it will be a U. S. responsibility, specifically a Navy responsibility, to police the Pacific and maintain the status quo.

Magnuson disclosed that the Navy's policy-making General Board is already tackling the problem of determining to which bases in the Pacific the U. S. should now make overtures to maintain permanently.

When the Board determines its needs, the Naval Affairs subcommittee will act as judge; the State Department, as negotiator. Navy Department requests for permanent rights will funnel through the Naval Affairs subcommittee because an appropriation authorization must be passed on before transactions can be made.

The process of securing Naval air assets in the Pacific will be continuous and perhaps piecemeal during the course of the war, Magnuson predicted, but he labeled it as somewhat "more practical" an approach than that of over-all post-war aviation planning groups, who will wait for cessation of hostilities before laying their cards on the table and making their bid. "The Navy will be doing some spade work for the over-all planners on post-war air policy," he suggested.

Follow Construction

A well-made and realistic point, related to the Pacific situation, by Assistant Secretary of State Adolph A. Berle, is that our transactions for post-war air assets must necessarily *follow* rather than *precede* construction and expenditure. To criticism by Congresswoman Edith Nourse Rogers (R., Mass.) who argued that before the U. S. spends its millions for bases in the Pacific, we should have some assurance of our future, Berle replied:

"If we go to work to arrange for an air base on a Pacific island and there is a condition that you are not allowed to go and take that air base because at the moment you are unable to get international assent that that air base shall accrue to you for the rest of time, are you then going to say, 'We wont go ahead and construct that air base and beat the Japanese?' It strikes me that you want to go ahead and construct the air base to beat the Japanese anyway."

The Navy, as stated by Knox and re-stated by Magnuson, now believes it is in a position to "formalize" matters of bases in the Pacific to a certain extent. The "formalizing" will be a continuous process during the war, according to Magnuson.

The Navy, it appears, will and is in the logical position to play the lead-role in presently promoting our post-war aviation interests in the Pacific, for two obvious reasons: (1) Our Pacific bases have been constructed, in the main, with Navy funds, the proportion constructed through lend-lease being relatively small, according to Berle; (2) The Navy knows its own needs for executing its responsibility of policing the Pacific after the war better than others can possibly know them.

Even though the Navy will plan for permanent bases with a view to its own needs, Magnuson suggested that these automatically will serve the needs of commercial aviation.

Matter of Conquest

Berle has indicated that Lend-Lease Administration can not take the lead in securing bases. "The control of air bases of the Pacific is in considerable degree at the moment a matter of conquest rather than negotiation—you cannot make it a condition in lend-lease," he said to Congressmen.

However, Knox in a much-publicized statement before the House Foreign Affairs Committee, revealing Navy intentions for post-war dominance of the Pacific, pointed out that the "spirit" of lend-lease is paving the way for successful negotiations.

"And one of the byproducts of . . . lend-lease . . . will be a willingness on the part of those associated with us to be generous . . . We have now a very fine set of stepping stones across the Pacific for air . . . We must always have those," he stated.

Defining "imperialism" as a "grab for more territory," Magnuson concurred with Knox that the U. S. has no intention of such jingoistic expression in the Pacific. "We want the bases to carry out what we believe will be the Navy's responsibility, guarding the Pacific," Magnuson, in line with Knox, said. "The Navy's air bases, available to commercial operations, will promote our business interests; on the other hand, our enterprises will probably be welcomed by and promote the interests of those conceding us rights—such was the case, for example, in the Caribbean," he maintained.

British Press Service.

Guns by Air: This picture, one of the few received from the New Guinea warfront, shows a 105 mm howitzer complete with spare parts, tractor and ammunition being unloaded from a U. S. plane "somewhere in the battle area." The gun crew also came with the gun. Shown are a portion of the gun tractor, gun wheels, ammunition and breech. At the extreme right is Lieut. Gen. George Kenney, commander of Allied air forces in the Southwest Pacific area.

House Committee To Delve Into Washington Fees

House Naval Affairs Committee has mapped plans to limit fees paid Washington representatives for securing government contracts to a "reasonable" amount, according to the Committee's counsel, R. E. Kline.

The number of aircraft parts and tool concerns who operated in Washington through contingent fee brokers and who would be affected by the Committee's action is large, Kline claims.

At hearings to be held in conjunction with legislation introduced by Chairman Carl Vinson (D., Ga.), from eight to 12 Washington brokers will be queried on their earnings. The Vinson legislation is designed to subject brokers to the renegotiation law, or authorize the Navy Department to force reductions in contingent fees.

Air Medical Studies Told

Extensive research in aviation medicine is under way in several lines, Dr. J. G. Townsend, Director of Industrial Hygiene Activities of the U. S. Public Health Service, has informed a Congressional appropriations committee.

"We are studying clothing for pilots," he said. "We are investigating certain visual functions, and we are determining the effects of new anti-malarial drugs on aviators."

In studies being made for the AAF, Dr. Townsend said, "We have in completion now a chamber which will bring the temperature down to 75 below zero and simulate atmospheres up 50,000 feet. Those changes can be made very rapidly. Thus we are able to simulate dive bombing and conditions of pressure with intense cold."

On the industrial front, Dr. Townsend said research is being made in the dangers of luminous paints, particularly in connection with use of radium in the manufacture of indicators on instrument boards.

"There are probably 4,000 people in this country engaged on that work now," he said. "It is a very hazardous field." Replying to questions, he said the Health Service is not duplicating aviation medicine studies being made by the Army and Navy.

Wilson Directives Give T. P. Wright Power as Plane Production Chief

By MARY PAULINE PERRY

IN A sweeping administrative order issued Mar. 3 by WPB Executive Vice Chairman Charles E. Wilson, Theodore P. Wright, formerly vice-president of Curtiss Wright Corp., and more recently Deputy Director of WPB Aircraft Division, emerges as chief of all aircraft production in the United States.

Wilson formally established the Aircraft Resources Control Office of the Aircraft Production Board which has been functioning unofficially for several months. Although it is believed in some circles that other changes are still contemplated, through Order No. 2-82, Wright and his ARCO are "hereby designated as the executive agency of the Aircraft Production Board on all matters pertaining to manpower, materials, and machine tools."

Since Wilson's trip to aircraft factories in the Middle West and on the West Coast it had been understood that he planned to draft a top manufacturer to work with him on the aircraft program. It is apparent from this newest order that he has changed his mind and decided to put control of the production program into the hands of Mr. Wright, at least for the present.

Long Career

Mr. Wright, who has had a long aviation career as an engineer, came to Washington in 1941 with OPM. Since then he has been alternately assistant chief and deputy director of the government's aircraft production set-up. He has outlasted a group of aviation experts such as Merrill Meigs and Harold E. Talbott and finally arrived at the top spot, second only to Wilson himself.

Simultaneously, another order, No. 2-81, was issued establishing the organization of the staff of the Aircraft Production Board. This staff remains at the Social Security Building and on WPB payroll whereas the ARCO staff has already moved into the Army's Pentagon Building and pay for this staff is divided between Army and Navy appropriations.

It is significant that Mr. Wilson established his own office prior to setting up ARCO. The Recorder of the Aircraft Production Board, Wright, has general supervision of the four branches remaining under Wilson. These branches are the Aircraft Priorities Branch, now under W. L. Jack Nelson as chief; the Project Rating Branch, with Millard E. Bowlus as acting chief; and the Project Service branch which will serve as expeditors.

The WPB Aircraft Production Division, status of which has been ambiguous since the reorganization at the time of H. E. Talbott's resignation, is finally abolished by the order. The aircraft production line-up starts with Wilson as chairman of the Aircraft Production Board. This Board, which has final say on production matters, has a membership of Lt. Gen. William S. Knudsen, Army War Production; Maj. Gen. O. P. Echols, AAF; Rear Admiral Ralph Davison, Navy Bureau of Aeronautics; and Wright, Resources Control Office Recorder. Under this Board the ARCO functions. It has been said that ARCO is purely a requirements planning organization. However, it remains to be seen whether Wright plans to carry production as well. The order gives him authority to do so if he wishes.

Settling Down

WPB seems to be settling down after a turbulent month during which the Program Vice Chairman Ferdinand Eberstadt was suddenly asked to resign and C. E. Wilson elevated to a new position, executive vice chairman. Since then there has been a regrouping of WPB staff functions on the top side.

Ralph J. Cordiner, Wilson's first aide after his arrival at WPB, who has been Director-General for War Production Scheduling, becomes a vice chairman to serve as a special assistant to Wilson.

J. A. Krug, Director of the Office of War Utilities, becomes WPB vice chairman in charge of Materials Distribution; Donald D. Davis, recently Director of the Program Bureau, becomes WPB vice chairman for Operations; Curtis Calder, Director General for Operations, is Executive Assistant to Wilson; William L. Batt remains a vice chairman; and finally Col. Robert E. Johnson as head of the Smaller War Plants Corp., retains the rank of Deputy Chairman.

Enough Top Men

Although Chairman Donald Nelson issued an administrative order setting up Wilson's office at the time he made him Executive Vice Chairman, these latest moves have put this office out of date. The offices of each new vice chairman must also be set up by Administrative order. It is said around WPB that two of the positions named in Wilson's first office, Director General for War Production and Director General for War Production Scheduling, will be eliminated. According to sources close to him, Wilson feels that he has enough top men on his staff now and additional personnel changes will be made only on a low level.

The exact wording of General Administrative Orders No. 2-81 and 2-82 follows:

ORGANIZATION OF STAFF OF AIRCRAFT PRODUCTION BOARD

Section 1. Purpose:

.01 The purpose of this order is to establish the organization and functions of the staff of the Aircraft Production Board.

Section 2. Organization:

.01 The staff of the Aircraft Production Board shall be composed of the following:

1. The Recorder of the Aircraft Production Board.
2. The Chief of the Aircraft Priorities Branch.
3. The Chief of the Project Rating Branch.
4. The Chief of the Project Service Branch.

Section 3. Functions of the Aircraft Priorities Branch:

.01 Under the general supervision of the Recorder of the Aircraft Production Board, the Aircraft Priorities Branch shall process applications submitted under the Production Requirements Plan.

.02 The branch shall keep advised of all policies and actions respecting priorities and allocation of materials, and shall advise the Aircraft Production Board, through the Recorder of the Board, of their effect upon the aircraft production program.

Section 4. Functions of the Project Rating Branch:

.01 Under the general supervision of the Recorder of the Aircraft Production Board, the Project Rating Branch shall examine the essentiality of all proposed new facilities and expansion of existing facilities for aircraft production, and shall make appropriate recommendations to the Facility Review Committee, the Facility Review Board, or the Construction Division, as the case may require.

Section 5. Effective Date:

.01 This order shall be effective from and after March 3, 1943.

* * *

Establishment of Aircraft Resources Control Office of the Aircraft Production Board.

Section 1. Purpose:

.01 It is the purpose of this order to establish the Aircraft Resources Control Office of the Aircraft Production Board, and to define its organization and functions.

Section 2. Organization of Aircraft Resources Control Office:

.01 There is hereby established under the Aircraft Production Board an Aircraft Resources Control Office, which shall consist of:

The Director, who shall be a member of and designated by the Aircraft Production Board.

A representative named by the Materiel Command, Army Air Forces.

A representative named by the Navy Department, Bureau of Aeronautics.

The Recorder, who shall be appointed by the Director of the Aircraft Resources Control Office, with the approval of the representatives of the Armed Services.

Section 3. Personnel:

.01 The personnel shall be composed of civilians appointed by the Director of the Aircraft Resources Control Office and Military personnel duly assigned by the Materiel Command, Army Air Forces and the Navy Department, Bureau of Aeronautics.

.02 The Military personnel designated under Section 3.01 shall have no regular assignments outside of the Aircraft Resources Control Office, and shall be responsible only to that office.

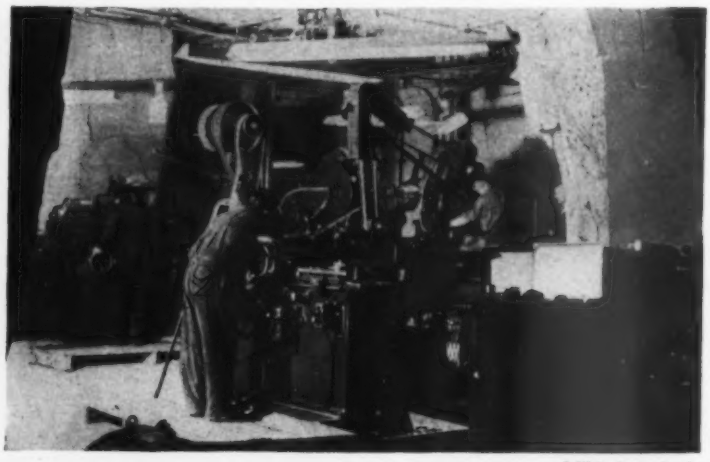
03. Civilian employes of the Aircraft Resources Control Office shall be carried in approximately equal numbers on the payrolls of the War and Navy Departments.

Section 4. Functions of the Aircraft Resources Control Office:

.01 The Aircraft Resources Control Office is hereby designated as the executive agency of the Aircraft Production Board on all matters pertaining to manpower, materials, and machine tools, and shall:

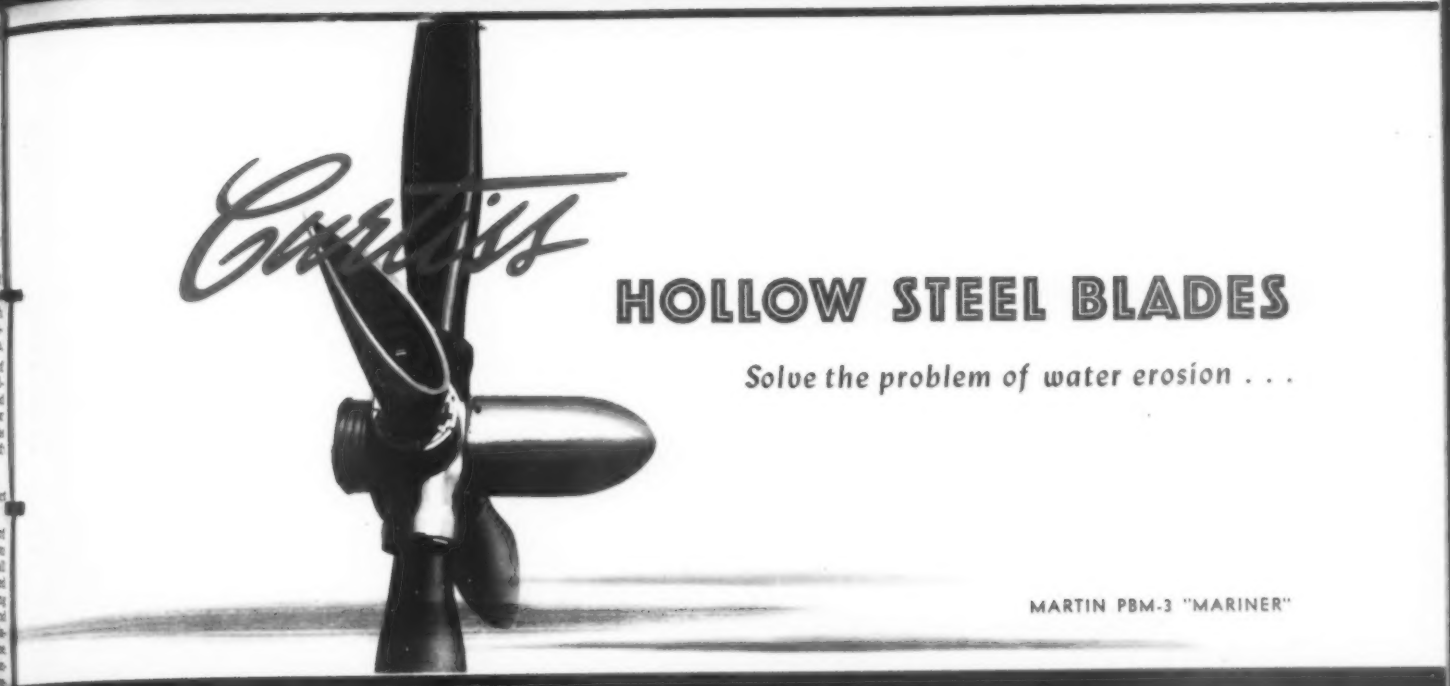
1. Coordinate and publish the

(Turn to page 22)



British Press Service

Underground: This English factory, 100 ft. underground, is busy producing airplane engines. Located in a century-old quarry, the factory covers an area of nearly 3,000,000 sq. ft. and is gas and bomb proof, according to the British. The operator in the picture is working an internal grinder.



Curtiss

HOLLOW STEEL BLADES

Solve the problem of water erosion . . .

MARTIN PBM-3 "MARINER"

CURTISS

ELECTRIC PROPELLERS

TOUGH NUTS TO CRACK

LOCKED in place on bolt by grip of tough locking collar
SEALED at top to protect working threads from corrosion
HOLDS nut thread against bolt thread — prevents axial play
FITS any standard bolt. Made in all sizes and types

● We've made billions of Elastic Stop Nuts.

And to our knowledge not one has failed to do its job.

But the tough nuts we refer to now are the fastening problems which looked hopeless until Elastic Stop Nuts were used.

We've met lots of these in our day — and licked them.

There have been plenty of them in war production.

And how well these fastenings have filled the bill can best be told this way:

Every nut we can possibly produce is going into war goods. Yet even doubling our round-the-clock plant capacity hasn't let us gain on the demand.

In the days to come there will be many peacetime needs for these nuts.

Some will be simple. Others will look like "tough nuts to crack."

Our engineers like to meet both kinds. They stand ready to share their experience with you, work on your fastening problem and recommend the proper Elastic Stop Nut application for the job.

ELASTIC STOP NUTS

Lock fast to make things last

ESNA
TRADE MARK

ELASTIC STOP NUT CORPORATION OF AMERICA
UNION, NEW JERSEY

40% of '43 High School Graduates to be Airmen, Victory Corps Says

FORTY per cent of the boys coming out of American high schools this year will go into the Army or Navy air service, with pre-flight training behind them, compared to the present average of 20% to 25% of high school inductees taken by the air arms, it is predicted by Dr. A. L. Threlkeld, director of the United States Office of Education's High School Victory Corps, in a statement to *American Aviation*.

So rapidly has the Air Service Division of the Victory Corps mushroomed since it was inaugurated in September, 1942, that the skeleton staff of the Office of Education assigned to its promotion has been unable to compile over-all figures. "But interest is running higher in the Air Service than any other division of the Victory Corps and there are several hundred thousand boys participating," said Dr. Threlkeld.

High schools in every state of the nation are now offering preflight training which includes: physical conditioning, basic mathematics and science, pre-flight aeronautics and military drill. The objective is to make this training available to every eligible boy to facilitate the completion of either the Army or Navy aviation-cadet training program.

Committee Listed

The program was drawn up in conjunction with a national policy committee composed of: Lt. Col. Harley B. West, War Department general staff; Maj. Francis Parkman, Director of Individual Training, Army Air Forces; Joseph W. Barker, special assistant to the Secretary of the Navy; Lt. Comdr. Malcolm P. Aldrich, representing the Office of Assistant Secretary for Air, Navy Department; William A. M. Burden, special aviation assistant to the Secretary of Commerce; Frank A. Tichenor, chairman of the Aeronautical Advisory Council, Department of Commerce; and representatives of the U. S. Office of Education Wartime Commission.

Junior and senior high school boys are eligible for preflight training under a broad outline prepared by the Office of Education. Physical requirements for eligibility are high, patterned after Army and Navy requirements for aviation cadets. Each school is asked to designate a counselor to work with the boys and carry out the various aspects of guidance and selection.

However, it is hoped that no potential material will be overlooked. Cautions the Office of Education: "The process of guidance and selection suggested is not intended to discourage unduly the enrollment in pre-flight aeronautics classes of any interested persons except those with characteristics which would surely prevent their success in the course or make them ineligible for aviation cadet training."

All qualified boys in the junior senior classes of the high school must be considered as potential candidates for aviation training, it points out.

"It is of great importance that every boy who meets, or who has a fair chance of meeting, the stringent physical and mental qualifications established for admission to aviation-cadet training be given the opportunity to receive preflight training in aeronautics."

Types of Training

Two types of specialized training related to wartime aviation are offered:

1. Courses of a vocational-technical nature designed to train for the manufacture and maintenance of military aircraft.

2. Elective courses in pre-flight aeronautics offered to pupils in the junior and senior years of high school and to out-of-school youth who are approaching or have passed the age of 18—the age at which they can be accepted for aviation cadet training by the Army and Navy.

Some large schools, well equipped with shops, apparatus and trained personnel for teaching and guidance, offer numerous specialized courses in both categories. These programs include instruction in such areas as aircraft sheet metal work, engine maintenance and repair, propellers, carburetion, electrical system, aircraft drawing and blueprint reading, aircraft instruments, radio, meteorology, air navigation, maintenance, repair, and flight of airplanes. A few schools have developed comprehensive long-range curricula involving three-year or four-year sequences of subjects to be taken by pupils who wish to specialize in aviation.

In most schools the senior class pupils cover as much of the subject matter included in the aeronautics courses as possible within one school year. The junior class pupils begin a planned two year sequence in the study of areonautics and also those sequences of science and mathematics which are offered by the school appropriate for aviation training.

The air services of the Army and Navy do not suggest that students take preflight aeronautics in place of fundamental training in mathematics and physics, but only after or concurrently with such training.

In a discussion of application of the courses to student needs, the Office of Education says:

"The term 'aviation cadet' is sometimes loosely used as referring only to men training to be flying officers, i.e. pilots, bombardiers, gunners or navigators. The term properly includes also men training in the Army Air Forces to be ground officers in armament, communications, engineering, meteorology and photography. The latter have somewhat lower physical requirements than the flying officers but have higher educational requirements. Boys who aim for this ground officer training should plan their high school courses to qualify for engineering school or the pre-engineering department of a liberal arts college. The course in preflight aeronautics would be helpful but hardly immediately necessary. They might as profitably have mechanical drawing and shop work in their high school program of studies.

Need Flying Officers

"The present urgent need is for flying officer candidates. For these the preflight aeronautics course is recommended by the aviation training authorities.

"In addition to flying officer candidates, there is urgent need for men to service, repair, and maintain the military planes on the ground. For youth who are candidates for this type of work in the air forces, the course in aeronautics, although generally helpful, would not be as valuable as would be certain vocational shop courses."

To implement the program through allocation of Federal funds to the states for full time supervisory personnel, the Office of Education now has pending before Congress a request for $3,068,000 in the First Deficiency Appropriation Bill. Besides providing special personnel, these funds are to be used to assist the states in adjusting organization and curricula of the schools, for medical examination of students and for improvement of teachers in the fields of aeronautics, science, mathematics and physical education.

Key figures in the proposed special personnel are described as follows:

One chief, Air Services Section, at $6,500 will plan and supervise the activities of the section and of the specialists employed in developing instructional outlines, teaching aids and devices in studying and evaluating the progress of development of aeronautical education in the high schools; maintaining liaison with representatives of the Army Air Force, Navy Bureau of Aeronautics, Civil Aeronautics Administration and other public and private agencies interested in aeronautical education.

On specialist, Army Air Forces, at $4,600, will maintain liaison with the Army Air Forces and particularly with the Training Literature Section of the training division to keep in touch with the needs of the Air Forces for pre-induction training in aeronautics in the high schools; be available as a consultant to curriculum workers, publishers and school officials concerned with the development of preflight aeronautical training in the schools; to undertake the development of teacher-training materials and self-teaching textbooks or correspondence courses for individualized study and instruction in small high schools.

One specialist, Navy Bureau of Aeronautics, at $4,600, will maintain liaison with the Navy Bureau of Aeronautics and particularly the bureau's training division, and will have corresponding duties to those outlined for the AAF specialist.

One specialist, civilian aviation and aircraft maintenance, at $4,600, will maintain liaison with the Civil Aeronautics Administration and other interested agencies, and will give special attention to the development of courses of training which will prepare aircraft repair, service and maintenance workers.

Dr. J. W. Studebaker, Commissioner of Education, told the House Appropriations Committee:

"Through discussions with people in the states . . . through some 20 meetings with the Policy Committee representing the Navy, the CAA, the War Manpower Commission and educational organizations, we have tried to find a reasonably modest program which, so far as cost is concerned, will get down to the grass roots in the states, and help to hold up the standards in physical fitness, mathematics, science and aeronautics, and give assistance to young people in figuring out what kinds of occupations they ought to try to prepare for in wartime."

He said the Army and Navy agreed it would save a great deal of time of boys in the ground schools "where they are now being given the elements of mathematics, science and aeronautics . . . infused into the curriculum of the high schools."

Proposed allotment of funds to states on an annual basis for aeronautics, mathematics and science (exclusive of other aids such as administration and instructional services) is as follows:

Alabama $21,255; Arizona $4,805; Arkansas $15,132; California $50,000; Colorado $11,509; Connecticut $19,174; Delaware $4,000; Florida $17,621; Georgia $29,406; Idaho $6,331; Illinois $50,000; Indiana $41,771; Iowa $29,490; Kansas $23,089; Kentucky $21,271.

Louisiana $22,376; Maine $9,372; Maryland $15,797; Massachusetts $49,227; Michigan $50,000; Minnesota $32,161; Mississippi $15,823; Missouri $36,828; Montana $6,673; Nebraska $17,425; Nevada $4,000; New Hampshire $5,307; New Jersey $44,605; New Mexico $5,156.

New York $50,000; North Carolina $41,926; North Dakota $7,092; Ohio $50,000; Oklahoma $27,744; Oregon $12,457; Pennsylvania $50,000; Rhode Island $7,271; South Carolina $19,207; South Dakota $7,735; Tennessee $23,310; Texas $50,000; Utah $8,725; Vermont $4,000.

Virginia $27,383; Washington $21,954; West Virginia $20,186; Wisconsin $34,707; Wyoming $4,000; Alaska $4,000; District of Columbia $6,114; Hawaii $5,544; Puerto Rico $4,000.

Sentinel Cross-Country: Stinson L-5, Vultee's liaison plane, the "flying jeep," is shown on an observation flight, one of its many functions, in which it serves as the "eyes upstairs" of the infantry, tank corps, cavalry and artillery, spotting enemy positions and dropping quickly sketched maps of ground unit positions.

XUM

Pricing Formula for Light Planes Released by Civil Air Committee

THE subcommittee of the Civil Aircraft Committee has agreed upon and released official pricing formula for light planes of 500 horsepower or less frozen under WPB Limitation Order L-262.

Chairman of the committee to whom sale requests should be addressed is W. L. Jack Nelson, Chief of WPB Aircraft Priorities Branch, Washington, D. C.

Other members include: William A. M. Burden, special aviation assistant to the Secretary of Commerce; Col. E. C. Langmead, General Staff Corps; Capt. Arthur W. Radford, director of aviation training, U. S. N.; and Edward Warner, member of the Civil Aeronautics Board, representing the Civil Air Patrol.

According to the original order, arrangements have been made with Defense Plant Corporation to pay for any planes purchased from present owners, where the purchase is negotiated by the Civil Aeronautics Administration for war training purposes. Executive Director of CAA War Training is R. McLean Stewart.

The text of pricing formula follows:

Date of Manufacture (A)———— Date of Appraisal (D)————

1. Manufacture's list price (as of October 1, 1941, if available, otherwise latest list price) ..... ———
2. Cost of extra equipment (not included in Item 1) ..... ———
   a. Installed on date (B)————to meet CAA contractual requirements ..... ———
   b. Other equipment installed after delivery ..... ———
3. Total cost of complete aircraft (Item 1 plus Item 2) ..... ———
4. Residual value of aircraft (20% of sum of list price & item 2) .... ———
5. Depreciable value of aircraft (Item 3 minus Item 4) ..... ———
6. Depreciated value of complete aircraft: (100-10 (D-A))% of Item 5 (Express (D-A) to nearest ¼ year; use 1 year if less than 1 year old) ———
7. Nominal value of aircraft (Item 4 plus Item 6) ..... ———
8. Deduction for——— hours normal engine wear since last overhaul ———
   a. Up to 500 hours:———hours at———per hour ..... ———
   b. Excess over 500 hours:———hours at———per hour .... ———
9. Deduction for needed repairs ..... ———
10. Normal appraisal value (Item 7 minus Item 8 and Item 9) ..... ———
11. Correction for excessive depreciation of extra equipment installed to meet CAA contractual requirements 8 (B-A)% of Item 2 (a) ———
12. Cost of reconditioning aircraft over 6 years old on date (C) ——— to meet CAA contractual requirements (exclusive of new engine and engine overhaul) ..... ———
13. Correction for reconditioning old aircraft (100-10(D-C))% of Item 12 ..... ———
    (Item 7 less Item 11 plus Item 13 must not exceed 5% of Item 3)
14. Appraisal Value (Item 10 plus Item 11 plus Item 13) ..... ———

You will note that a number of the items in this formula are self-explanatory and in other cases are merely intermediate steps in the arithmetical computation. We wish to offer, however, an explanation of and justification for the terms which are not directly obvious from the formula itself. Explanations of these items are as follows:

Item 1. This particular item, which is the starting point of the formula, was the most difficult to establish. Because of the fact that the major portion of the aircraft to be purchased have been used under Civil Aeronautics Administration contracts, some rather artificial market conditions were created. This was especially true in the case of aircraft to be used in our Secondary Course, some of which have recently sold on the open market at a figure considerably above initial cost in spite of the fact that some of these aircraft had 1500 to 2000 hours of time on them.

After considerable deliberation it was decided to adopt the policy of the WPB in using Oct. 1, 1941 as the date from which to determine list price to be used. The authority for this date is contained in Public Law 421, 77th Congress, Emergency Price Control Act of 1942:

"Section 2A: So far as is practicable, in establishing any maximum price, the Administrator (Price) shall ascertain and give due consideration to the price prevailing between Oct. 1 and Oct. 15, 1941 for the commodity or commodities included in such regulation or order."

In the case of aircraft for which no manufacturer's list price would be available as of this date it was decided to use the last list price quoted by the manufacturer, prior to Oct. 1, 1941.

Item 2. We found it advisable here to deviate slightly from the Army formula in separating the cost of equipment added in order to meet CAA contractual requirements from that otherwise added. This was necessitated by the fact that many aircraft used in our Cross-Country and Link-Instrument Courses had recently installed in them equipment whose value was practically equal to and in some cases more than the depreciated value of the aircraft itself. When the Civil Aeronautics Administration field representative appraises this aircraft, he will be instructed to determine the trade-in value of equipment removed from the aircraft and replaced by other, and deduct this trade-in value from the list price of these items. Here again, as in the case of the aircraft itself, the list price as of Oct. 1, 1941 is to be used when practicable.

Item 8. The deduction for normal engine wear is to be made on the basis of the number of hours of engine use, since last overhaul, and the hourly rate is based upon the cost of major overhaul. Since it has been the policy of the CAA to recommend major overhaul of engines after 500 hours of use, the deduction for engine time in excess of 500 hours since last overhaul will be computed at a different rate per hour from the initial 500 hours. These rates per hour for engines in various horsepower ranges are as follows:

Horsepower	*Up to 500 Hours*	*Excess over 500 Hours*
50 to 90hp, inclusive	$ .30	$ .10
91 to 145hp, inclusive	.45	.15
146 to 225hp, inclusive	.90	.30
226hp and over	1.15	.40

Item 9. Since it is contemplated an aircraft will be purchased in its present condition, a deduction will be made for the cost of needed repairs. It will be the responsibility of the CAA field representative making the appraisal to justify his estimate by an itemized list of repairs needed showing the cost of each.

Item 11. Since extra equipment recently added was depreciated on a 10 year basis back to the date of manufacture of the aircraft in Item 6 of the formula, a correction for excessive depreciation on specific equipment added to meet the CAA contractual requirements is made here. The percentage correction is obtained by multiplying the number of years between date (A) and date (B) by the factor 8 in order to retain the residual value allowance previously computed. Obviously, the same results could be obtained by depreciating this equipment listed under Item 2 (a) of the formula separately from the rest of the equipment and the aircraft itself. It was arranged in this manner, however, to make it clear that we were using the essential parts of the Army formula as previously mentioned in our explanation of Item 2 above.

Item 12. It has been found necessary especially in our Secondary and Cross-Country Courses to use a number of old aircraft which had to be reconditioned prior to use under the terms of a CAA contract. In many cases the formula value of this aircraft would be only the residual value which of course did not represent a fair price. Since the experience of the CAA indicates that most aircraft over 6 years old had to be reconditioned prior to use under a CAA contract, it was decided to make a correction for the cost of this reconditioning on all aircraft more than 6 years old. Inasmuch as engine overhaul or installation of a new engine is normally necessitated by wear rather than by age, these items are not to be considered in the cost of reconditioning. The cost of reconditioning claimed in Item 12 of the formula will be justified by an itemized list made by the CAA representative appraising the aircraft.

Item 13. From the formula it should be obvious that this correction for cost of reconditioning it made by depreciating this cost on a 10 year basis back to the date of reconditioning. Upon doing this, however, it appeared possible for a reconditioned aircraft 7 years old to have a higher appraised value than a similar aircraft only 6 years old regardless of whether or not the later aircraft had been reconditioned. It became necessary, therefore, to set a maximum amount for this particular item, which maximum is to be the formula value of a 6 year old airplane, ignoring corrections for engine wear and needed repairs. Since the formula percentage value of a 6 year old airplane with these items omitted would be 100% diminished by 60% to 80%, it appears that this maximum value should be 52% of Item 3, total cost of complete aircraft. Therefore, in appraising aircraft 7 or 8 years old the CAA representative making the appraisal shall deduct Item 7 from the sum of Item 11 and 52% of Item 3. If this value is less than the value previously obtained for Item 13, this Item is to be reduced accordingly. For your information this formula has been tested for a number of aircraft of various types, including those recently reconditioned and those with considerable extra equipment installed subsequent to delivery by the manufacturer, and it appears to give a fairly acceptable value in practically all cases.

Big Airport Underway In Washington Area

A huge 4360 acre airport is under construction by the Army near Camp Springs, Md., between Baltimore and Washington, and is expected to be the largest port in the East, possibly the largest in the U. S. Military installation may be ready by May 15.

Described as the largest dispersal-type project of its size anywhere, there will be no hangars, planes being parked on stems 400 ft. apart jutting from 21 primary and secondary taxiways. Three four mile runways have already been concreted.

Two fighter squadrons, one fighter group headquarters, an air base detachment, and a guard squadron will be stationed at the field, with personnel of about 900 men. Barracks are under natural tree camouflage.

Pensacola Chief Decorated

Rear Admiral George D. Murray, U.S.N., Commandant of the Naval Air Training Center at Pensacola, Fla., and Chief of the Naval Air Intermediate Training Command, was recently presented with the Distinguished Service Medal "For exceptionally meritorious and distinguished service . . . in command of a task force in the Battle of the Santa Cruz Islands on Oct. 26, 1942." Rear Admiral John S. McCain, Chief of Navy's Bureau of Aeronautics, made the presentation at ceremonies in the Ground School auditorium of the main station.

Arnold Gets Air Medal

Lieut. Gen. H. H. Arnold, chief of the Army Air Forces, has been given the air medal, it was announced Mar. 6, for "meritorious achievement . . . in . . . expansion of the Army Air Forces . . . The high efficiency and superb morale of the AAF components at home and abroad are substantially the result of his active personal leadership and outstanding devotion to duty."

Out of jungles, swamps, dust and dangers, Pan American creates modern airports the world around.

This is the way Belem looks today—a vital stop on the inter-American aerial lifelines.

Pioneered in peace *vital in war*— the world-wide routes of the *Clippers*

TODAY, in the interests of Victory, thousands of transport planes are using the Belem airport pioneered, in co-operation with the Brazilian Government, by Pan American's associated company, *Panair do Brasil*. Without this and other PAA completely equipped stepping stones, the skyway across Africa to the Middle and Far East *could not be flown*.

All through Central and South America—in Alaska, the Pacific and the Atlantic—Pan American pioneered the main air routes now so vital to Victory for the United Nations. From the start, 15 years ago, it took plenty of sweat, plenty of heartbreaks and plenty of capital investment to do the job.

Flying the Pacific was, for example, once upon a time "dreamstuff." Made a reality by PAA, today it is helping to make possible an offensive in the Solomons.

* * *

For today's critical wartime demands and tomorrow's peacetime needs, a tremendous expansion and improvement program is in progress on PAA routes. All over the world, Pan American facilities are hastening the day of Victory for the United Nations.

PAN AMERICAN WORLD AIRWAYS SYSTEM

BUY WAR BONDS

Wings over the WORLD

PAN AMERICAN CLIPPERS

War Agencies Review

FUNCTIONS AND ORGANIZATION OF THE PURCHASE DIVISION, WAR DEPT., were explained in a statement by Col. Albert J. Browning. "The Air Forces handle their procurement separately through the Materiel Command, but in order to maintain uniformity in policy and methods, the Under Secretary of War delegated to the Director of the Purchases Division his authority over Air Forces procurement." The Department has issued a revised edition of its Army Purchase Information Bulletin.

A new rating plan to govern the ultimate cost to be paid by the Government for group insurance for employes of Army contractors operating under cost-plus-a-fixed fee contracts went into effect March 1. "It provides tighter control on insurance company charges for overhead and the creation of a general pool to absorb excessive losses."

All Army supply branches were called upon to speed up production of munitions and other vital combat materials through a greater spread of sub-contracts. Instructions were sent to branch and local offices throughout the country to urge prime contractors to restudy their facilities and where advantageous, assign part of the work to outside plants.

●

CONCERTED ATTACKS ON ABSENTEEISM are being prepared through cooperation of government Bureaus with industrial groups. Serving as a clearing house for all war agencies interested in production, the Production Information committee is composed of executives in charge of labor-industry information and incentive activities of the Army, Navy, Maritime Commission, War Manpower Commission, War Production Drive, War Production Board, Labor Department and Office of War Information.

A comprehensive plan has been drawn up as a guide for labor management, communities, and government agencies. Handbooks are being prepared and the opening of the intensive drive against the causes of absenteeism will probably be inaugurated by a high Washington official.

●

TOOLS DIVISION, WPB, reports that machine bottlenecks are being cleaned up and by the end of April a large part of the immediate requirements for expansion of aircraft production will be met and it will not be necessary for WPB to continue to channel more than half the total output of machine tools into the aircraft industry.

Purchase orders for many repair and maintenance parts of general industrial equipment no longer need be accompanied by certificates showing exemptions from restrictions imposed by Limitation Order L-123.

Providing a single standard form of certification which may be used to validate any delivery order under the Controlled Materials Plan, CMP Regulation No. 7, has been issued, obviating the necessity for several different certifications on a single order.

Aircraft industry is reported to be registering complaints over the handling of CMP in that the Aircraft Scheduling Unit, located at Dayton O., which has a complete set of forms differing from those of CMP.

●

DECENTRALIZATION OF WPB ACTIVITIES is increasingly successful, officials claim. Most recent order directs that after March 1, applications for priority assistance on Form PD-1A be filed with the nearest of 131 WPB district offices and authorizing the 12 regional offices, beginning March 15, to assign preference ratings on PD-1A certificates to deliveries of materials valued at $100 or less. This preliminary value limitation will be progressively stepped up, and within six weeks it is expected that more than 80% of all PD-1A applications will be handled by the regional offices.

●

GENERAL SCHEDULING PROCEDURE which WPB will follow in controlling production of important component parts has been formalized through issuance of General Scheduling Order M-293, Critical Component Parts.

●

AN AIRCRAFT ALLOY STEEL SECTION is set up in the Steel Division, WPB, to help speed deliveries of certain alloy items to aircraft plants. Production of alloy steel ingots for aircraft and the many other wartime uses rose in January to 1,260,000 net tons, more than 300,000 tons above the 1942 average monthly output. By 1944, the nation's capacity for producing alloy steel will be about 1,400,000 tons a month.

●

STATISTICS DIVISION, WPB, issues a report on State distribution of war supply and facility contracts through December 1942. Distribution of major aircraft supply contracts by State is:

(Thousands of Dollars)

Total Reported	26,761,906	Mississippi	180
Arizona	17,758	Missouri	155,032
California	5,387,836	Nebraska	166,359
Colorado	999	New Jersey	2,175,897
Connecticut	2,281,065	New York	3,347,108
Florida	950	North Carolina	19,468
Georgia	409	Ohio	1,713,540
Illinois	1,167,742	Oklahoma	385,819
Indiana	1,040,903	Oregon	688
Iowa	171	Pennsylvania	493,613
Kansas	1,402,327	Rhode Island	242
Delaware	18,850	Tennessee	94,723
Kentucky	32,556	Texas	694,827
Louisiana	68,496	Virginia	623
Maryland	1,223,318	Washington	1,147,706
Massachusetts	273,756	Wisconsin	126,302
Michigan	1,467,100	Off Continent & Unassigned	1,851,719
Minnesota	3,824		

●

AMENDMENTS TO CMP REGULATIONS 1, 3 AND 4, provide a number of important changes in Controlled Materials Plan Regulations, establishing procedure for contingencies not previously covered.

●

SELECTIVE SERVICE BOARDS throughout the country have been notified to defer college students who can complete certain designated courses by July 1, 1943. Included are aeronautical engineers, chemical engineers, mechanical engineers, meteorologists, saftey engineers and transportation engineers for air, highway, railroad and water.

Selective Service Bulletin No. 10, amended March 1, 1943, cites as essential occupations scientific and specialized personnel in which are included a similar list of aeronautical and other engineers.

Instructions to Selective Service local boards prohibiting the drafting of men with children who are recognized as dependents under the SSS Act and Regulations until such action is authorized by National Selective Service Headquarters are still in effect, WMC stated in an official release.

CONRAD CAMPBELL

T. P. Wright

(Continued from page 18)

schedules for the production of airframes, aircraft engines, and aircraft propellers, which, after coordination with the Joint Aircraft Committee and approval by the Aircraft Production Board, shall become directives to the established production agencies who are charged with their execution.

2. Prepare and present to the War Production Board, or other appropriate agencies, manpower, materials and machine tool requirements for the aircraft program, and serve as Claimant Agency for the aircraft program under the Controlled Materials Plan.

3. Direct and supervise the activities of the Aircraft Scheduling Unit, and, through the Army member of the Aircraft Scheduling Unit, the activities of the Industrial Planning Section of the Materiel Center, Army Air Forces, in the scheduling and allocating of materials, machine tools, and such critical aircraft components where conflict of schedules exist, as may be delegated to it by the Joint Aircraft Committee.

4. Provide such coordination of aircraft materials conservation activities of the Army Air Forces, Navy Bureau of Aeronautics, and the War Production Board, as may be found necessary to assure the effectiveness of these activities and to avoid conflict and duplication of effort.

5. Effect policy development and general direction of coordination on standardization between Aircraft Industry groups, the Aircraft Industry and the Military Services.

6. Prepare and furnish, as the sole source of such information, statistics relating to the joint aircraft programs of the Army Air Forces and the Navy Department, Bureau of Aeronautics, to the War Production Board, the Aircraft Production Board, and such other agencies as are entitled to receive them.

.02 In executing the functions under Section 4.01, the Director of the Aircraft Resources Control Office is authorized to act on his own initiative, within the directives of the Aircraft Production board, and shall assume the responsibility for determining the specific matters that should have advance approval of the military representatives of the Office.

Section 5. Transfer of Aircraft Production Division Functions:

.01 The Aircraft Production Division of the War Production Board is hereby abolished. The functions of that Division within the scope of Section 4.01, as well as all records and such equipment and supplies as may be agreed between the War Production Board and the Director of the Aircraft Resources Control Office, are hereby transferred to the Aircraft Resources Control Office.

Section 6. Transfer of Aircraft Production Division Personnel:

.01 All personnel of the Aircraft Production Division are hereby transferred to the Aircraft Resources Control Office within the provisions of Section 2.01 with the exception stated under Section 6.02.

.02 Personnel of the Priorities Branch and the Facilities Section of the Aircraft Production Division, War Production Board, shall be transferred to the Aircraft Production Board and shall remain on the payroll of the War Production Board, but shall be responsible only to the Director of the Aircraft Resources Control Office.

Section 7. Transfer of Aircraft Production Division Budget:

.01 The unexpended budgeted funds of the Aircraft Production Division, War Production Board, for the current fiscal year shall be transferred to the Aircraft Production Board in such amounts as may be determined by the Administrative Officer of the War Production Board in consultation with the Chairman of the Aircraft Production Board.

Section 8. Effective Date:

.01 This order shall be effective as and after March 3, 1943.

Peggy Guetter Joins AMERICAN AVIATION

Appointment of Miss Peggy A. Guetter as West Coast Representative for AMERICAN AVIATION and three other publications of American Aviation Associates, Inc., has been announced.

Peg Guetter

Miss Guetter succeeds James L. Straight who has been associated for some time with the Aircraft War Production Council, Inc., and who is now giving full time to that organization.

Director of Western Air Lines News Bureau from 1939 to 1942, Miss Guetter has recently been director of publicity for the Los Angeles Junior Chamber of Commerce. A graduate of Temple University in Philadelphia, and a former newspaperwoman in that city, she is widely known in the Los Angeles area.

Her headquarters are room 1401 Park Central Bldg., 412 W. 6th St., Los Angeles, Calif. In addition to *American Aviation*, she will represent in editorial and business capacities *American Aviation Daily*, *American Aviation Directory* and *Universal Airline Schedules*.

THE ARMY DIVES IN!

SECOND PRINTING: Send 10¢ for your copy of this fascinating 96-page history of aviation By Assen Jordanoff, author of "Your Wings", with illustrations of current fighting types. Airplane Division, Dept. M, Curtiss-Wright Corporation, Buffalo, N. Y.

A new Curtiss warplane wears the Army colors—an attack bomber, the A-25—whose speed and destructive power will count decisively in assuring final victory. Builder of the first airplanes ever designed specifically for dive bombing tactics, Curtiss-Wright is proud that the Army Air Forces have chosen this weapon which adapts these tactics to Army offensive operations.

CURTISS-WRIGHT
Corporation
AIRPLANE DIVISION

FIRST
Since the Birth of Aviation

1927 • U. S. Army—A-3—An attack type powered by a Curtiss D-12 Engine. Designed specifically for ground strafing and low altitude bombing.

1932 • U. S. Army—A-8—An early low-wing monoplane type powered by a Curtiss Conqueror engine. Increased speed and heavy bomb capacity were improved characteristics.

1934 • U. S. Army—A-12—A Wright Cyclone furnished added power. Slots and flaps permitted low altitude maneuvers at slow speed. Machine guns in wheel fairings aimed downward.

1937 • U. S. Army—A-18—First twin-engined airplane (two Wright Cyclones) designed as attack-bomber. Bombs were carried internally. The nose housed four machine guns or a fast firing cannon.

There goes a Headline

...the Axis won't print

Streaking from its base a squadron of Army Bell Airacobras heads for action... action that will bring forth another story of American bravery. Such a headline of heroism comes in the news from General MacArthur's Headquarters, Australia, of the award of the Silver Star to this Army Pilot for "gallantry in action:"

...away, he made ...nding and saved his plane.

Lt. Jemison was a member of a flight of Airacobras assigned to the task of strafing Lae, New Guinea, on May 4. When bad weather made it impossible for the whole formation to reach the target, Lt. Jemison attacked individually, destroying one enemy bomber grounded at the airdrome and badly damaging two others.

Headlines read at home and "shop talk" at battle fronts tell the same story: the Army Bell Airacobra is one of the world's most deadly fighters. Starting with a new conception of aerial striking power, the Airacobra was designed from the cannon bearing nose to the tail, specifically for the job. The job it is doing is headline news... news the Axis won't print.

Victory will call for peace time planes produced by the same brilliant planning and sound engineering... but incomparably better because of the lessons learned in war. We are looking forward to that assignment. © Bell Aircraft Corporation, Buffalo, New York.

Airacobras for victory—

FUTURE PLANES FOR PEACE

BELL *Aircraft*

PACEMAKER OF AVIATION PROGRESS

XUM

Mission Accomplished . . . on Bomber Training Flights

Drawing from actual photograph of Beechcraft AT-11 Bombing Trainer

● Fledgling crews must accomplish countless bombing training missions at home before they are ready to take their place in America's far-flung armada of bombers.

Constant take-offs and landings by bombing trainers test the mettle of tires equally as much as heavy bombers themselves.

General Tires proved equal to their mission of safety on the flight to Tokyo . . . and they are proving that they have the quality and strength equal to the mission of standing the gaff on bombing training flights.

In every branch of wartime aviation, General's long practical experience in aviation tire manufacture is helping to bring the utmost in *safety*.

For your safety, too . . . depend on General.

See Your Fixed Base Operator or Write

THE GENERAL TIRE & RUBBER CO.

Aviation Division, Akron, Ohio

The **GENERAL** **AIRPLANE TIRE**

—KNOWN AROUND THE WORLD FOR QUALITY AND SAFETY

2 U. S. Agencies Issue Data on Flight Strips

More than a score of domestic flight strips have been completed or are under construction, with others in the planning stage, the Federal Works Agency announced recently, as the War Department reported that portable steel runways are now being produced in quantities by American manufacturers under supervision of the Corps of Engineers, Services of Supply.

"During 1942, a sufficient number of these landing strips was delivered to the Army to lay a continuous 150 ft. steel runway from Washington to Buffalo," the War Department said. "Deliveries are expected to be even greater in 1943."

Besides the secret system being laid out in the Continental U.S., the flight strips, using the portable landing equipment, have been demonstrated in the North African campaign, in the Southwest Pacific, and in other combat zones occupied by American troops, it was announced.

Weeks Saved

As previously described in *American Aviation*, the mats consist of prefabricated steel grids or networks, constructed in sections, which may be packed easily and transported by plane or ship. Wherever suitable terrain may be located, these sections are quickly stretched out and locked together, saving not only days but weeks of ordinary construction work in establishing a flying field.

"By laying these mats longitudinally, in two directions at once, starting from the center, it is sometimes possible to provide a field 150x3000 ft. in less than 48 hours, not including whatever grading or other preparations may be necessary," the War Department announcement revealed.

The Federal Works Agency asserted that its system of flight strips is being built by the Public Roads Administration, in cooperation with the AAF and state highway departments. The first domestic strip was completed last June somewhere on the southeast coast. Thomas H. MacDonald, Commissioner of Public Roads, called the flight strip a "bargain counter airport."

Smith, Barringer Given Up

War Dept. Mar. 5 listed as "definitely lost" an Army plane missing since Jan. 24, carrying Col. Walter Sumpter Smith, former WPA official during construction of Washington National Airport, and later chairman of the Air Safety Board, and Maj. Lewin Barringer, nationally known glider and sailplane pilot, and at the time of the accident head of the Army Air Forces glider unit.

People Stared, Chickens Ran As 'Windmill' Floated West

Tales reminiscent of aviation's pioneer days when the public stood agape and chickens took to the henhouse when a plane appeared are being told by C. L. Morris, engineering test pilot of the Sikorsky Aircraft Division of United Aircraft Corp., in describing his unprecedented and record-breaking flight of a helicopter from Connecticut to Dayton, O., made last year but only recently publicized by the Army, which received the ship.

During the 760 mile flight, the first cross-country trip in the western hemisphere for a helicopter, the unofficial American straight-line distance record was repeatedly established and exceeded, finally remaining at 92 miles. A new unofficial world endurance record for helicopters was set at one hour, 50 minutes, comparing with the official record of one hour, 35 minutes, set by Igor Sikorsky, the ship's designer, in a single place model in 1941.

Three weeks before the five-day delivery flight, Morris had attained a speed of 82mph, and climbed to 5000 ft. in the ship, so that the 60mph speed he sought to maintain on the 16 hops to Wright Field could best be described as "cruising." Flying time of the trip was 16 hours, 10 minutes.

Although first details of the flight were described by Mr. Sikorsky in an address reported in *American Aviation* March 1, Morris reveals additional incidents in the current issue of *Air Force*, just out.

Stops were made at New Hackensack, near Poughkeepsie; Albany, Utica, Syracuse, Rochester, Buffalo, and Dunkirk, N. Y.; Erie, Pa.; Perry, Willoughby, Cleveland, Mansfield, Springfield, and Dayton, Ohio.

The two-place ship made the flight without incident, the only mechanical trouble which developed being in the transmission.

Two unscheduled stops were made, and in both instances the only factor considered by Morris were a comfortable house and telephone. "The size of the available landing field or its surface condition had no influence on where to land," Morris writes. Because of a storm which cut off the approach to Buffalo, Morris "decided to land and sit it out" near Batavia. This he did between two farmhouses.

Again, a short distance out of Erie, Morris landed to check with his ground party which was traveling by automobile. Here he picked a small field beside the highway he knew his ground crew was following.

Writing of the start of the flight Morris said, "Mr. Sikorsky was not wholly convinced of the wisdom of this flight. He felt that this 'first - of - the - type' should be handled with kid gloves and be delivered to Dayton by truck, thus eliminating the potential hazards of a cross-country flight in a totally novel type of aircraft that had had less than twenty flying hours since its wheels first left the ground."

Mr. Sikorsky joined Morris on the flight from Cleveland to Mansfield and from Springfield to Dayton. During the entire flight the ship followed closely the route taken by the ground crew.

"From Albany to Utica was uneventful except for the pleasure of flying safely up the Mohawk Valley with the hills on either side often higher than the ship. I felt like the Wright brothers, looking down from my transparent perch, 200 or 300 feet above the house-tops", Morris wrote.

"Farm yards full of chickens and animals would suddenly become uninhabited as shelter was sought from this strange hawk—but the yards would quickly fill again as houses and barns ejected groups of human beings gaping skyward".

Between Rochester and Buffalo, Morris continued, "The automobile party and the helicopter went down the highway together, the ship flitting ahead to each cross-road to make sure there was no converging traffic to cause danger—then signalling them to proceed without worry at the intersections".

Taking off from Buffalo smoky, hazy conditions cut visibility to less than a mile for a time and Morris steered his course half by compass and half by highway.

"Once, as a towering radio mast loomed out of the murk, I became impressed with the value of an aircraft that could come to a complete stop in mid-air if necessary".

Between Erie, Pa., and Perry, O., Morris had the roughest leg of the trip. He was flying head-on into a gusty wind varying from 12 to 29mph, and accordingly stayed close to the ground. "But close to the ground we got the full value of all ground 'bumps'. Every patch of woods had its own air currents; and to the leeward of a town or village the air was extremely choppy", he wrote. "Many times we would lose 75 to 100 feet of altitude in a down-gust—and we were only 300 feet above the ground most of the time.

"But the ship behaved beautifully. It didn't pound and pitch like a conventional aircraft under similar conditions. All it did was float up and down, and get kicked around sideways. There were no sudden shocks, and even when it yawed to one side or the other, it was not necessary to use rudder to straighten it out. Given a few seconds, it would come back by itself".

Looks Easy: Hovering only a few feet above the ground, the Sikorsky helicopter developed and constructed for the U. S. Army, picks up a message.

Reichelderfer Gets Robert Losey Award

F. W. Reichelderfer, Chief of the U. S. Weather Bureau, recently received the Robert M. Losey Award given annually by the Institute of the Aeronautical Sciences, Inc., New York, N. Y.

Reichelderfer

This award, in memory of Capt. Robert M. Losey, U. S. AAF meteorological officer who was killed in Norway in 1940, is presented "in recognition of outstanding contributions to the science of meteorology as applied to aeronautics." Reichelderfer was cited for his "pioneering work and continuing activity in advancing the science and practice of meteorology as applied to aeronautics, with particular recognition of the development under his direction of the network and system of upper air sounding by radiosonde."

Communications and other radio equipment made by Wilcox are at work to help carry on flight control safely under the increased strain of wartime activity. Present Wilcox manufacturing is devoted exclusively to the Government's needs to coordinate fighting forces on land, sea and in the air with vital communications. Until peace is won, the sign on our door reads, "Uncle Sam comes first."

Communication Receivers
Aircraft Radio
Broadcast Equipment
Control Apparatus
Transmitting Equipment

WILCOX ELECTRIC COMPANY

Quality Manufacturing of Radio Equipment

14th & Chestnut **Kansas City, Missouri**

"E" for Excellence

☆ In receiving this joint citation of the Army and Navy, the management and personnel of The Weatherhead Company recognize that the award carries with it not only an honor but a grave responsibility. We will discharge that responsibility by making every effort to increase the flow of vital parts for 'planes, tanks, trucks, ships, combat cars, radios and munitions which Weatherhead plants have been turning out at the rate of millions every day!

Look Ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND, OHIO

Manufacturers of vital parts for the automotive, aviation, refrigeration and other key industries.

Branch Offices: Detroit, Los Angeles, New York and St. Louis

60 AAF Contract Schools Form National Group

The operators of 60 primary and basic training schools under contracts with the Army Air Forces have formed the Aeronautical Training Society to cooperate in carrying out their pilot programs and have opened offices at 1025 Connecticut Avenue, N. W., in Washington, D. C.

J. Wendell Coombs, who recently left the Reconstruction Finance Corp., to become president and treasurer, said the group will promote civilian and commercial flying by economical and efficient development of aeronautical training, cooperate with Federal and state agencies and private organizations so that national needs may be filled by civilian managed training facilities, formulate uniform, safe and modern techniques for pilot training by uniting all recognized and qualified aeronautical schools of this type, and promote better public understanding of the contributions of civilian trainers, as well as to represent members in matters of common interest.

The Advisory Council is composed of Maj. C. C. Moseley, operator of Cal-Aero Academy, Mira-Loma Academy and Polaris Flight Academy; Major W. F. Long, Brady Aviation School, Texas Aviation School and Dallas Aviation School; and Hal S. Darr, Darr School of Aeronautics, Georgia Aero Tech and Darr Aero Tech. Members of the Board of Directors include Maxwell W. Balfour, operator of the Spartan Aircraft Companies in Tulsa, Muskogee and Miami, Okla.; Leland Hayward, Thunderbird 11, Thunderbird 1 and Southwest Airways, Inc.; Frank W. Hulse, Southern Aviation School and Southern Aviation Training School; Albert I. Lodwick, Lodwick Aviation Military Academy and Lodwick School of Aeronautics; John Paul Riddle, Embry Riddle Co., Riddle McKay Co. of Tennessee and Riddle McKay Aero College; Bennett L. Woolley, Air Activities of Texas; Harry S. White, Palo Alto Airport, Inc., and Coast Aviation Corp.; and Mr. Coombs.

For several years an informal group of training school operators met informally to discuss similar problems of maintenance, accounting, Selective Service, etc. Mr. Coombs said it was at the suggestion of Major Moseley that this association was formed as a clearing house for such problems

There will be no conflict between the Aeronautical Society which requires War Department contracts for membership, and National Aviation Training Association, whose ranks are open only to those under CAA contracts. With the same general purposes and aims, they expect to cooperate wholeheartedly, Coombs said. The Society was incorporated in Delaware in December.

Shilt Reelected

Noble C. Shilt has been reelected president of the Washington Air Derby Association.

Navy Lags in Deciding How To Spend Air Funds

The Navy is lagging in deciding how it will spend its aviation appropriations, a report made public by the House Appropriations Committee reveals.

The report was made in conjunction with a Supplemental Navy Dept. appropriation bill for the present fiscal year which authorizes that $562,000,000 in 1942 fiscal year aviation appropriations be "continued available for obligation until June, 1943," and that 1943 aviation appropriations be concontinued available for obligation during the next (1944) fiscal year. The bill, of course, under the circumstances advances no new funds to the Bureau of Aeronautics.

The bill does, however, extend contractual authority to the Navy amounting to $239,740,000 so that it can proceed with its expanded public works program, approved only recently by the House Naval Affairs Committee. The public works program covers many aviation items including construction of an airfield at Annapolis, expansion of Naval Air Transport Service stations and new lighter-than-air stations.

Hearings on Feb. 19 disclosed that "a very considerable portion of the 1943 appropriations for aircraft procurement remained unobligated," the House Appropriations Committee states in its report, adding:

"On its own motion, therefore, after counseling with officials of the Bureau of Aeronautics, the committee is proposing to extend the obligation availability period of the aircraft procurement portion of the 1943 appropriation until the close of the fiscal year ending June 30, 1944. It is felt that while the war lasts it would be in the best interests of more economical and efficient procedure to make aviation appropriations for aircraft procurement available for two fiscal years. Otherwise, in the rush to get orders placed in the closing days of a fiscal year funds are very apt to be obligated for products not of sufficiently proven worth or of a quality or type which further inquiry would rule out."

A "rider" which House Appropriations Committee has attached to the Navy Appropriation bill provides that War and Navy Dept. appropriations "shall be available for procurement by any other executive department or independent establishment of the Government through administrative allotments in such amounts as may be authorized by the Secretary of War or . . . of Navy, respectively, without transfer of funds on the books of the Treasury Dept."

The provision will facilitate the use of War and Navy funds for training and other programs executed by other agencies, it is believed.

Stipulation attached to the Appropriation measure removes the "limitations on the number of men inducted into the naval forces and . . . Marine Corps under the provisions of the Selective Training and Service Act of 1940, contained in section 107 of the Naval Appropriation Act, 1943."

The Appropriations Committee's report reveals that additional funds provided will allow for expansion of Naval personnel "from a peak number heretofore provided of 131,442 officers and 1,000,000 enlisted persons, to a peak of 158,763 and 1,450,000 respectively. The revised peak number of WAVES, included in the foregoing number, is 3,250 officers and 17,500 in an enlisted status."

Rear Adm. Randall Jacobs, Chief of the Bureau of Navy Personnel, said that the Navy expected to have 2,800,000 officers and enlisted men by June, 1944. Other testimony showed that as of Feb. 1, there were 126,700 officers and 1,159,600 enlisted men in the Navy.

New 'Seamew:' Curtiss-Wright's scout observation SO3C-1, designed and built for U. S. Navy, and now being delivered for British service. Called "Seamew" by the British, ship is a two-place, mid-wing monoplane for long range scouting missions. It can be equipped either with wheel landing gear (as shown) for operations from land bases and aircraft carriers, or with floats for operation from battleships and cruisers.

New Plastics Developed For Planes, Parts

Although the uses of plastics and plywood for aircraft application are increasing daily, top WPB officials caution that no substitution is being made merely to conserve metals. Conversions are being considered only on the basis of how much faster or lighter they make a plane or whether they perform a job better than it was being done before.

Plywood and phenolic resins are still critical materials and as difficult to procure as steel and aluminum. Therefore, it is impracticable to use unless it improves on other materials.

Both plywood and plastics are being used for primary, secondary and non-stressed members. By the very nature of the two materials most substitution is being done in non-stressed members and in secondary members.

Cargo plane building involves the largest amount of plywood in aircraft production at the present time, officials say.

Since Aircraft Resources Control Office Conservation Directive No. 1 was issued Dec. 21, severely limiting use of methyl methacrylate, acetate manufacturers have made considerable progress and within a year still more startling improvements in quality are expected. The light stabilization process being used in cellulose acetate by aero quality Lumarith has made it an approved substitute for methyl methacrylate. This is used only for transparent inclosures on planes.

Methyl methacrylate has been discontinued for: (1) all clear enclosures in gliders; (2) clear enclosures other than bombardier or bomber and turret enclosures on all training type airplanes unless otherwise directed by the Services; (3) all portholes in patrol bombers and for clear enclosures in cargo, transport and utility aircraft except for the pilots' immediate forward and side lines of vision and for sections requiring compound curvature where the optical qualities of methyl methacrylate are essential to the safe and efficient operation of the ship; (4) landing and wing tip light cover glasses in all aircraft; and (5) inspection windows in any type of shipping case, for card holders, check-off list, map and data cases, soap dispensers, and all other similar non-essential applications where other material may be satisfactorily used.

Another recent innovation in the field that is rapidly expanding is high strength paper base plastic materials. Made with specially formulated high strength paper impregnated with phenolic resin, this plastic has created a field whereby paper manufacturers, otherwise curtailed by war, can get into aircraft production and keep their mills running at top speed.

This paper plastic, exploited by McDonnell Aircraft Corp., is used for elevators, trim tabs, formed sections of wing skins, wing tips, rudders, etc., in all types of planes from trainers up to tactical aircraft.

XUM

Air Power Review

Highlights of the Fortnight

February 22

Under-Secretary Patterson says war's end is likely in 1944 or 1945, reports "The day is not far off when Japan will feel the heavy hand of war in a way it has never felt before," adds the Nazis feel severely the RAF and U. S. bombings . . . London circles see recent appointment of capable Lt. Gen. Frank Andrews (AAF) as U. S. commander in European theater as another reason why they foresee 4000 plane daylight bombings by Fortresses and Liberators, says United Press.

Comdr. William Hollingsworth, now special air observer for Adm. Stark, calls dive bombing a formidable supporting weapon and about twice as accurate as glide-bombing, says Jap naval air technique "an exact copy" of ours, discounts talk of Jap suicide dives . . . Algiers radio says French troops in Africa take first installment of war materials furnished by U. S. . . . Gen. Enrico Pezzi, commander of Italian airmen on Russian front, presumably killed. He was brother of Col. Mario Pezzi, altitude record holder of 1939 . . . Swiss reports say a complete reorganization of German plane program began in October, though present output is low. Mass production may start in April, including a number of new types with engine and controls on left wing and cabin on right wing, such as the Biohm & Voss 141 . . .

February 23

Navy Secretary Knox calls combination of surface ships and planes best counter offensive against subs; praises blimps, which not only sink subs but, when on patrol, force them to stay far below surface; reports Navy has about 100 blimps operating or building . . . Rep. Cox tells Georgia legislature our Army and Navy are building for a 10 year war as a precaution . . . Britain lost 2759 bombers over Europe from start of the war through 1942, says Wilfred H. Gallienne, British consul general in Chicago . . . Premier Stalin says in three months of the Red Army's offensive in the past winter Germany lost more than 4000 planes on the Russian front.

Australian censorship is lifted on mass air parade by all available civil planes last December which carried "enormous quantities of munitions" to the New Guinea battle zone. A. B. Corbitt, director-general of Australian civil aviation, says a general summons to all civil planes was broadcast one night, ordering pilots to assemble at a certain airport. The following night "virtually every ship in Australia capable of flying was winging toward Port Moresby where they joined a large fleet," says AP. Together, they rushed men, guns, food and enormous quantities of munitions into the battle zone.

"TEACHING THE GERMANS GERMAN!"

Rex in The London Daily Mirror

America will be stronger than Britain after the war in men-of-war, merchant ships and airplanes, says Sir Archibald Hurd, shipping authority in conjunction with a report of the Chamber of Shipping of the United Kingdom.

February 24

Adm. William F. Halsey, commander of South Pacific forces, "speaking as an airman too," says battleships play a potent role in the Pacific war. "The American faith in the battleship as a potent weapon has been justified." . . . British Air Ministry says RAF bombers have dropped more than 100,000 tons of bombs on the European enemy since Sept. 3, 1939, more than half of this in past 12 months. This excludes bombs dropped by fighter-bombers, Army Cooperational Command, and Coastal Command planes. A spokesman denies RAF disagrees with U. S. daylight bombing theory, adding that round-the-clock bombing is the goal. He reports last year Bomber Command itself carried out more than 2000 day sorties, resulting in loss by Germany of a "great number" of fighters. He adds: "We must stretch German fighting strength until it reaches its limit and at that point we should be bombing Germany by daylight without many casualties. That would be the beginning of the final phase of the war."

Air Ministry spokesman further says in Tunisia the Axis can still concentrate superior air strength in central sector, that the Germans are losing faith in dive bombers, with only about 50 in Tunisia, and total Stuka strength now is only about 300 planes. Britain is now receiving delivery of U. S. dive bombers.

Air Vice Marshal Harry Broadhurst, 37, takes command of allied air forces in western desert, succeeding Air Vice Marshal Coningham, Cairo reports say . . . U. S. Bomber Command has done "exceptionally good work," says Gen. Sir Henry Maitland Wilson, new Commander-in-chief of Middle East, to press men in Cairo. . . . AAF has named Brig. Gen. W. T. Larson head of the anti-submarine command, who is now in England with picked graduates of a U. S. anti-sub school practicing with new inventions and methods over U-boat "routes" in Bay of Biscay and around British shores, *Washington Star* reveals. A North Atlantic air umbrella involving various plane types, may be one answer, Larson says, emphasizing that subs can take "quite a beating" from planes before they are destroyed.

Allied air power in Tunisia is now so great that, when exerted over a single battlefield, it is close to being the decisive factor, says a New York Times correspondent, who also says U. S. plane strength there is greater than that of RAF. Airacobras, Fortresses, Marauders, Lightnings, Mitchells, Bostons, are aided by Spitfires, Hurricanes, and Wellingtons. Overall ground-air operations of Allies are still defensive, however.

February 25

Testimony of Maj. Gen. I. H. Edwards, assistant chief of staff, U. S. Army, before House committees, reveals an AAF of 900 squadrons, or 2,450,000 men, is planned for this year, or equal to all the Axis air forces, including Japan, and comparing with 900 squadrons of other United Nations. He says a pursuit squadron averages 25 planes, a bomber squadron 12 to 13, with the average squadron allotted a ground force of 200 men, 60 pilots, copilots, navigators, and bombardiers.

Capt. Rickenbacker sees total victory not before fall of 1944, maybe as late as 1945 or 1946 . . . Maj. Gen. Robert Olds, commander of 2nd air force since May, is relieved because of ill health, being replaced by Maj. Gen. Davenport Johnson . . . T. V. Soong, Chinese Foreign Minister, says in Washington that air power is the most important factor in the present military situation in China and that a few hundred U. S. planes would enable China to start a big offensive.

Secretary Stimson says allied air forces from Britain and North Africa are wearing down axis shipping and resources . . . The U. S. is now operating in its Air Transport Command and Naval Air Transport Service the "greatest aerial transportation system the world has ever seen," says Maj. Gen. Ralph Royce, and this will help to solve the U-boat menace.

February 26

Japan is building less than 1,000 planes a month, and Germany's plane production is falling off, says A. T. Colwell, Cleveland engineer, at a Toronto SAE meeting. Nazi planes shot down in North Africa show more and more substitute materials, he adds.

Gen. MacArthur reveals this message from President Roosevelt: "Efficient bombardments launched by your air forces during the past few weeks . . . in support of the situation in the Solomons and in furtherance of your own operations command our admiration. The arduous land campaign along the Papuan coast, which has decimated the enemy and now threatens him at Salamaua, has made a great impression on our people and must have a demoralizing effect on Japanese confidence in the fighting efficiency of their ground troops." . . . It is a fair assumption that the Axis in Tunisia will face days of pounding from the skies, the like of which probably has not been seen yet in this war, says a Cairo spokesman . . . U. S. Fortresses and Liberators plaster Wilhelmshaven.

February 27

Aircraft carrier Monterey, 5th carrier to be turned out by N. Y. Shipbuilding Corp. in New Jersey in six months, is launched . . . Secretary Knox reveals the Navy has built an air base on the island of Upolu, in the Samoan group, a New Zealand mandated isle.

February 28

Prime Minister Fraser of New Zealand reports there have been no negotiations on permanent U. S. bases in the Pacific, but favors joint discussions with Britain and Australia participating . . . *Pravda* says Germany has increased its air strength on the Russian front . . . RAF HQ in North Africa says Allied air forces have destroyed 669 enemy planes in Tunisia, at a cost of 286. The statement, issued to explain the new Northwest African air force set-up headed by Maj. Gen. Carl Spaatz, AAF, reveals that now working closely together from the same bases in south Tunisia are RAF, AAF, South African Air Force, Royal Australian Air Force, and RCAF, with some squadrons of the Royal Hellenic (Greek) and the Fighting French air forces, while in the western Tunisian theater are other RAF and AAF bases . . . Reichsmarshal Goering says the Luftwaffe will, "at the opportune moment," strike again with fresh strength.

March 1

Gen. MacArthur says Japs have substantially reinforced airpower north of Port Darwin and Port Moresby, threatening Australia . . . Lend-Lease Administrator Stettinius says until more planes are available and more gasoline can be carried into China for their return flights, our supplies for China will continue restricted.

Churchill reveals RAF dropped more bombs in Europe in February than in any previous month "by half as much again," with unofficial estimates for both RAF and U. S. bombs in February set at 11,000 tons, against a 1942 monthly average of 4,000. German fighter retaliation is weak. RAF heavy bombers were out half the nights of the month, while medium bombers and fighter-bombers hit 12 times in daylight, and AAF made five large daylight raids.

"The time is near when the weather will permit the RAF to raid every night and the U. S. and fast, lighter British bombers to strike more frequently by day," says N. Y. *Times* London report,, estimating 40% of entire Nazi air force is defending western Europe, with 800 planes in Sicily and Italy, 800 in Germany proper, 700 in Northern France and low countries, 300 Southern France, 300 in Tunisia.

March 2

RAF gives Berlin its heaviest bombing, on the 10th anniversary of the Luftwaffe, using incendiaries, 2 tonners and 4 tonners, dropped from Lancasters, Stirlings, and Halifaxes, 19 of which did not return. German radio replies with threat that U. S. cities "may not be safe a few months hence." Capt. Harold Balfour, British air official, said the air softening up process is part of a pattern which will send the Allies into Europe.

Total destruction of the Jap on his own soil is the goal of the AAF, Lt.

(Turn to page 30)

XUM

IF YOU ARE LOOKING FOR ANSWERS TO YOUR AIRCRAFT PLYWOOD FINISHING PROBLEMS

SEND FOR THIS FREE TECHNICAL MANUAL

Aircraft plywood and its finishing requirements are raising problems in many aircraft manufacturing and wood finishing plants. Specifications are changing every day. Since the first specification mentioning plywood was issued, technical research, plant experience and field testing have brought about changes in materials and methods.

New Up-To-The-Minute Information

A technical bulletin, AIRCRAFT PLYWOOD AND ITS FINISHING REQUIREMENTS, was issued by Ault & Wiborg Corporation, a Subsidiary of Interchemical Corporation, in August, 1942. Since then we have been in continuous touch with aircraft manufacturers and plywood finishing plants, and have developed new materials and revised finishing systems.

A new up-to-the-minute technical bulletin, AIRCRAFT PLYWOOD AND ITS FINISHING REQUIREMENTS—Number 2, is ready for distribution now.

Send for your free copy today. It answers your questions on such things as

Complete Finishing Systems
Weights per Square Yard
Clear Plywood Sealer
Synthetic Plywood Filler
Pigmented Plywood Sealer
Lustreless Camouflage Enamel
Finishing Interior Surfaces

This big manual is packed full of technical data and detailed information. There isn't a word of sales promotion in it. It might contain just the answer to the question which is bothering you at the moment. Fill out and mail the coupon today.

AULT & WIBORG CORPORATION

A Subsidiary of Interchemical Corporation

75 VARICK STREET • NEW YORK CITY

Leaders in Industrial Finishes for 64 Years

Send Today for Your FREE Copy of This Valuable, Informative Manual

This up-to-the-minute manual contains the answers to scores of questions on Aircraft Plywood finishes. It was prepared by the research staff of Ault & Wiborg Corporation, leaders in industrial finishes for sixty-four years. The material is a result of close co-operation with Army and Navy officials, aircraft manufacturers and wood finishers. Every material and system recommended has been checked by research, plant experience and field tests. Send for your copy today.

Aeronautical Division
AULT & WIBORG CORPORATION
75 Varick Street, New York, New York

Send me a copy of your manual, AIRCRAFT PLYWOOD AND ITS FINISHING REQUIREMENTS—Number 2.

*Name*_____

*Title*_____

*Company Name*_____

*Street*_____

*City & State*_____

Royal Navy Air Base: This "naval air station," built deep in the African bush, is used as a base by squadrons of the British Fleet Air Arm. Shown preparing for take-off is a Grumman Martlet.

Big British Bombers Excel For Night Forays—Eaker

The Army Air Forces will continue a relentless daylight bombing campaign over Axis Europe this year, leaving the burden of night poundings to the RAF.

Answering criticism in some press circles that weather conditions and the characteristics of American aircraft dictate night campaigns by our airmen, Maj. Gen. Ira Eaker, commanding general of the Eighth Air Force, in Britain, struck out at AAF critics in a statement released simultaneously in London and Washington in February.

The heavy British night bombers and the American four-engined Fortresses and Liberators are all superlative in their fields, the general asserted.

"It is sometimes assumed that American Air Forces in Britain are wrong to bomb by day or the RAF is in error to bomb by night," Eaker said. "What is best for one must inevitably be best for the other.

"This is a wholly mistaken view which would not be dangerous to the Allied cause were it not for the fact that if it prevailed our war effort would be dangerously jeopardized. If the RAF bombed habitually in the daytime its losses would be too high. If the U. S. Air Forces bombed at night its losses would be higher and its efficiency would be greatly reduced. The simple reason for this unalterable fact is that the RAF bombers were built for night bombing and their crews have been specially trained to execute night bombardment missions admirably. On the other hand American bombers have been designed and built for day bombardment and American crews have been specially trained in high altitude precision daylight bombing.

"This does not mean that the RAF cannot occasionally bomb by day. Neither does it mean that the U. S. Army Air Forces may not occasionally bomb at night. But neither will be in its best element nor do its best work under these conditions.

"There are three primary reasons therefore why U. S. Army Air Forces in Britain should continue daylight bombing and the RAF bomber command should continue to operate largely at night. First is the fact that the maximum destructive effort against the enemy can be realized under these conditions only. The second reason is because under these conditions enemy defenses will be alerted throughout the 24 hour period and it will require three shifts to do the A.R.P. job and man the defenses adequately as against one shift if both forces operated habitually in a limited period. This fact alone will keep several hundred thousand German workmen from the factories and war industries. The third reason is that American day bombers operating over Germany in daylight force the enemy to maintain a large force of day fighters which otherwise would be free to operate on the Russian front, on the African front, or elsewhere against Allied Forces. In short the present scheme, bombing around-the-clock, keeps the enemy's fighter and anti-aircraft defenses extended to the limit and they are already stretched thin indeed and badly overworked.

"Some Allied writers on air tactics and strategy have told our American people that the military leaders are wrong to persist in day bombardment. These well-meaning individuals, if they persist and if they should succeed in altering American air strategy, would perform a great service to the enemy, and be more dangerous to the Allied cause than any fifth column now operating anywhere in the world.

"Indeed some of this campaign undoubtedly springs from subversive or enemy propaganda. There is a malicious tendency in some quarters to compare American and British bombing aircraft, insisting that one is superior and the other inferior. The plain facts are that each is superlative in its field and for the type of work for which it was designed. The British four-engined night bomber can carry a great load since it does not have to carry defensive armament and a large crew, operating as it does by night when day fighters cannot attack it successfully. The American four-engined bombers are the best day bombers in the world. They must sacrifice some bomb load in order to carry a large number of gunners, many 50 caliber guns and thousands of rounds of ammunition. They make up for this depreciated bomb load by their ability to hit small but vital targets and by the fact that they can and have knocked down more than four enemy fighters for every bomber lost.

"It would be the greatest tragedy which the Allied cause has suffered in this war if misguided public sentiment or mistaken air strategy or enemy propaganda should force either of our American or British bomber efforts to be lifted from their present job, bombing during the hours of the day when they are most effective and operating under the conditions when they can obtain maximum destruction of the enemy's hard pressed industry."

During the last six months, the War Department said, Flying Fortresses and Liberators have struck destructive blows repeatedly at Nazi-held France and at naval installations in Germany.

Air Power Review

(Continued from page 28)

Gen. Arnold says, ultimately bombing day after day and night after night. He tells Madame Chiang Kai-shek that U. S. flyers are getting through to China in larger numbers with larger loads. Brig. Gen. Claire E. Chennault, commanding general of the China Air Task Force, describes local conditions as "definitely better," although mainly plans rather than accomplishments. He thinks Jap planes are deteriorating, with fewer experienced airmen to fly them. There are few Jap planes in Burma, he thinks.

Britain finds the latest German plane cannon, the M.G. 151, inferior to the British Hispano gun . . . Churchill congratulates MacArthur on the Papuan victory, special admiration being shown for wide use of aircraft to transport supplies.

March 3

U. S. Ninth Air Force, Cairo, states Col. Keith K. Compton now heads heavy bombardment group, succeeding Col. George McGuire, transferred . . . Navy says nine air attacks by Army and Navy were made on Kiska in Aleutians in February, showering down 500,000 lbs of bombs, and knocking out 10 enemy planes without a loss. Used were Navy Liberators, Army Fortresses, Mitchells, Marauders, Lightnings, Warhawks and Airacobras.

British Navy so far in this war has lost one new and four old aircraft carriers, plus two which had been converted from merchant ships, but "the weight of aircraft launchable from shipboard" is greater than at the war's start, says A. V. Alexander, First Lord of Admiralty.

March 4

All Allied officials hail victory of Gen. MacArthur and Lt. Gen. George C. Kenney in obliterating a 22 ship Jap convoy, New Guinea bound, including three cruisers and seven destroyers, and about 15,000 troops, in the Bismarck Sea. The job was done by about 136 aircraft at a cost of a heavy bomber and three fighters shot down. The japs used about 150 planes of which at least 102 were put out of action. Many observers say this was the greatest aerial triumph in history.

March 5

RAF struck at Axis Europe every day in February and on 26 of the 28 nights, London officials report, while German air activity slacked off sharply, with less than 50 sorties in which about 20% of the raiders were brought down . . . Spitfire fighters have been operating in Australia for some time, Australian officials say.

A South Pacific general, unnamed by INS news chief Barry Farris, is quoted in an interview as pleading for just two days production of U. S. planes every month to blast a path to Tokyo.

"An alternate to the land routes to China is now being provided by the U. S. and Britain, but the details are a military secret," press quotes Viscount Cranborne in the House of Lords. This route is in addition to air routes being organized from India . . . Lord Strabolgi says the U. S. is turning out 12,000 transport planes this year . . . The German aircraft carrier Graf Zeppelin pops up in a fleet of Nazi warships near Trondheim, Norway.

Lt. Gen. Kenney's Australian air force could use more planes to better effect than most air commanders in the Pacific "because he has bases that are on the edge of a huge spread of islands where the Japs are doing big things and offer big targets," says an Australian dispatch to N. Y. *Times*.

March 6

The Allies' round-the-clock bombing campaign hits its 10th consecutive day and "there is no doubt that it is creating havoc in both Germany's military economy and German minds," reports the New York *Times* editorially . . . Maj. Gen. Ira C. Eaker says in London that the U. S. in 1943 will probably expand its British bomber force to equal that of England's . . . Acting Secretary of State Welles says U. S. has no intention of making a move to acquire permanent military bases in the western hemisphere, referring apparently to some proposals to take ownership of British bases in return for lend-lease aid.

Gen. Chiang Kai-shek in a new book, "China's Destiny," recommends a 10 year construction plan for China including building of 20,000 transport planes.

"Naval aviation became of age as this nation was suddenly plunged into a global war that has proved for all time the importance of air power in modern combat," says Navy Secretary Knox in his annual report, mentioning also a "vast program for construction and conversion of new aircraft carriers" . . . The Tomahawk, Kittyhawk, and Airacobra "are defending some of the most important points of the Soviet Union," says AP correspondent Henry Cassidy. "American attack bombers have not been on public display but they are reported reliably to have been used effectively . . . But the Russians believe they have fighters . . . superior to anything we have delivered." Cassidy named, for example, the Red Air Force Yak.

March 7

Gen. George C. Marshall, Chief of Staff, turns down a proposal that he be promoted to field marshal, a 5 star job . . . Chinese sources estimate Japanese plane production at 500 a month, and claim the Jap Army now has hardly more than 1500 planes while the navy force has slumped to 2600 first line planes and 1700 reserves, says the AP. Another AP writer, Clark Lee, says U. S. officials are beginning to talk in terms of a fleet of several hundred aircraft carriers to lead the attack on Tokyo. The ships would be of improved construction for better protection, and there would be so many that we could lose a large number and still keep going.

R. H. W.

A FLIGHT OF NORTH AMERICAN B-25 MITCHELL BOMBERS HAMMERS THE AXIS IN NORTH AFRICA

NORTH AMERICAN PLANES MAKE NEWS AROUND THE WORLD

Mitchell and Mustang Take Part in Six of "Big Ten" Stories

TWO GREAT NAMES in the news are the North American B-25 Mitchell bomber and P-51 Mustang fighter. In a recent press association list of 1942's ten biggest war stories, there were SIX in which these planes figured!

Here are the roles they played: (1) B-25's bomb Tokyo. (2) B-25's play a major part in smashing Rommel's Afrika Korps. (3) Mustangs harass enemy in sweeps over Europe. (4) B-25's aid great Russian winter offensive. (5) B-25's destroy Jap ships, airfields, munitions in New Guinea. (6) Mustangs provide strong aerial support over Dieppe.

North American planes are making even bigger news in 1943 because they are even better than last year. We never "freeze" design. Whenever battle experience or production skill suggests an improvement, we change *right* now. Today's B-25, for instance, is more than 22,000 drawing changes better than the B-25's that bombed Tokyo last year!

This policy of constant improvement demands extra work and extra ingenuity from every North American employee. But it's worth it. It will win the war sooner. It will save many American lives. It will give *you* plenty of good news about North American planes on every battlefront from now 'til victory.

NORTH AMERICAN AVIATION, INC.
Inglewood, California
Kansas City Dallas
Member, Aircraft War Production Council, Inc.

THE FIRST AMERICAN PLANE designed entirely on basis of combat experience—that's the North American P-51 Mustang. Heavily armed, maneuverable, one of the world's fastest. American and British flyers call it "the best fighter plane of 1943."

NORTH AMERICAN ARMY E NAVY *Sets the Pace!*

XUM

Bomber Conversion 'Wishful Thinking'—Sheehan

(Continued from page 14)

in percentage of gross load useful . . . no increase in economy.

Take the Douglas DC-4A, the big, four-engined refinement of the original DC-4 Super-Mainliner. 70% of the power needed to keep it in flight is chargeable to lifting the empty hulk of the plane, another 10% of the power is needed to lift the necessary weight of fuel and crew on an approximately 500 mile flight . . . and only 20% is chargeable to revenue-producing load. The total energy of over four thousand horse-power is required to carry the mere 20% payload for which the plane was designed.

True, unit operating costs have decreased with the years, but only because of economies due to larger aircraft, increased operations, experience, etc. As shown in the accompanying table, the economy ratio hasn't varied 10%, and the overall trend has been downward.

Slow Planes Needed

True economy is far more apt to be encountered in cost of operation per pound-mile flown than in miles flown per hour operated. The slower plane, which is designed to give greater lift and additional cargo space, is more economical than the plane of limited cargo capacity and higher speed.

As long as the airplane can bring any two cities of the United States so close together that at most only one day is lost to shippers, then the maximum value of air freight is attained with speeds that involve the least sacrifice of lift and space characteristics. Additional speed is a chase after a will-o-the-wisp that only delays the time when air shipments can really compete with surface shipments.

The advantages of high speed are supposed to consist of: savings in pilot costs; depreciation and maintenance charges spread more thinly by flying more miles for each hour of operation; and fewer planes to make the same number of trips, hence less capital outlay.

The theory of savings in pilot costs holds water just so long as all pilots are paid on the same basis regardless of type of equipment flown. But there will be tens of thousands of pilots when this war is over, and, though there may well be jobs for the great majority of them, the supply is apt to exceed the demand—a "buyers" market. Oh, yes, the boys with their log books reading in the high thousands of hours flown will still fetch premium prices, but the average pilot of the average *freighter* will in all probability draw down wages not so far above his truck-driving and freight-train-engineering brethren.

The situation may well be likened to the rails and the sea, where the engineer of the crack streamliners and the skipper of the ocean greyhound are paid more for having longer experience and greater responsibility. Incidentally, the slower-scheduled freight plane can be the proving ground where stratoliner pilots build up their experience.

Nothing can be more false than the concept that depreciation is less at high speeds. It's like trying to lift yourself by tugging at your bootstraps. Everyone knows that the man who drives his car more slowly in the end gets more mileage and longer life out of it. The same is true of airplanes, which, after all, are governed by the same physical principles.

If operation at moderate speeds extends the life of the equipment, it also extends the time between overhauls by exerting less strain and less wear on moving parts. This means lower maintenance charges per unit of operation.

Tropical Freighter: A specially fitted Douglas DC-2, shown being loaded at a Latin American terminal, is one of several now carrying cargo exclusively on the Canal Zone-Santiago run. Panagra recently opened the last lap of this 5,300 mile route.

Haul More Cargo

There is a fallacy, too, in reasoning that since fewer planes of the high-speed variety are needed for a given number of scheduled trips, the faster type is more economical. The fact is that it takes more fast planes to haul a given amount of tonnage. For, assuming that each is aerodynamically efficient for its prime purpose (high speed on the one hand, great lift on the other) and that both are the same size, then the slower plane will haul more freight per trip.

Where, then, should air freight planners look for equipment? The answer is even more obvious than that which the "something-for-nothing" boys are seeking.

Let's assume that in the not too distant future the day toward which we are striving arrives, and Peace On Earth is more than a hope. We find the country equipped for the production of airplanes beyond its ability to produce any other one thing. Here are trained personnel, tools, machines, designers, factories . . . "the works" . . . all assembled to produce airplanes. *Then let them produce airplanes* . . . let them build the flivver plane that your family and mine are hoping for, and the big airliners to carry us nearer to each other, and to our world-wide next door neighbors, and honest-to-goodness air freight planes.

Let them build sky trucks capable of ten to twenty cents per ton-mile operation . . . planes of the flying wing type with a 50 to 60% useful load ratio . . . planes with Diesel engines having low fuel consumption and low fuel cost . . . planes that can economically carry much of the world's surface express and less-than-carload-lot freight, and can cast an eye on the heavy bulky stuff, too.

10,000 to Start

Ten thousand such planes couldn't begin to handle the business within this country alone! Here is a market for the aircraft manufacturer who might find his military sales cut from under him. Here are jobs for the workers today, and enough left over to take care of the boys who come back from "over there".

Here is the kind of plane that could do a job, and stand the world in good stead, too.

"But", these air freight planners might ask, "when the war is over we'll need the planes right away. How about that?"

That answer, too, is simple. Start *now* to design those planes. Winning the war is, as it should be, our first problem, but the world won't hold still on that day and wait for you and me and everyone else to catch up . . . No. We'll have to be ready for Peace . . . or we won't deserve it.

Assembly Line for Freighters? Maj. Sheehan urges that assembly lines like this one at Consolidated's Texas plant be put to work after the war making air freighters. Planning should start now, he says.

New Glider Chief

Acting chief of the Army Air Forces Glider Section, Transport and Facilities Division, Directorate of Air Support, is Captain Henry Alexander Wise, Jr.

Captain Wise has been acting chief since the plane on which Major Lewin Barringer was flying was lost. Formerly secretary of and counsel for All American Aviation, Inc., Wise learned to fly at Hampton, Va., in 1927. He is well known in aviation circles. Assisting Captain Wise is Lt. William H. Baldwin.

XUM

"Seventy BELOW"

. . . . IS TOUGH ON HOSE LINES

AEROQUIP has met the low temperature challenge. First, in the factory, then in the field. In our own laboratory, we researched this problem at temperatures as low as —70° F.

At (censored), combat planes were grounded for winterization. Aeroquip met this sub-zero challenge with new Aeroquip low-temperature hose and Aeroquip detachable hose fittings. Planes were fitted with new hose lines tailored on the spot—a fast, emergency field service which sent them back into fighting service without delay.

Aeroquip detachable hose fittings simplify field base replacements by reducing the thousands of combinations of sizes and lengths of hose lines to dozens of fittings and sizes of hose. These detachable hose fittings are instantly re-usable with new Aeroquip hose for hose line repairs. These are fighting advantages for our air forces.

SPECIFY

AEROQUIP

HOSE LINES

SELF SEALING

COUPLINGS

West Coast Office—
1709 West Eighth St.,
Los Angeles, Calif.

Eastern Representative—
J. Henry Reisner,
Hagerstown, Md.

Southwestern Representative—
James A. Hughes,
Love Field,
Dallas, Texas

Canadian Representative—
Prenco Progress & Engineering Corp.,
7274 Stafford St.,
Toronto, Canada

AEROQUIP CORPORATION
JACKSON, MICHIGAN, U. S. A.

Quick Rebound of Private Flying Forecast by Johnson after Armistice

FURTHER restrictions are ahead for the wartime civilian pilot but they will be temporary, and private flying will resume after the Armistice at a speed and on a scale exceeding the tempo of commercial aviation, Maj. Earle Johnson, national commander of the Civil Air Patrol, believes.

While popular writers concentrate their attention on the coming development of great airliners soaring over intercontinental routes to far-off points which are now merely flagstops of the Army Air Transport Command, Maj. Johnson turns the spotlight on the future of aviation in the smaller communities, the private flyer and the feeder route to the home town airport.

He forecasts production of lightplanes on a mass scale, apparently expecting few revolutionary changes from the small craft we know today.

"I am not worried that aviation will lapse as it did after the last war," he told the Aeronautic Association of Boston Feb. 25. "We may be sure that the supremacy we are attaining will not be lost. The men who are pioneering new routes, new methods, and new airplanes are giving us the means of winning both the war and peaceful development afterwards.

Not Exaggerated

"I do not think that most of the current statements too much exaggerate the future of aviation. Aviation has found ways of making dreams into realities. But in one important particular many of the generalizations are not firmly rooted to the ground as all flying must be. They do not come down to the home town airport where aviation starts and returns. Even in the ranks of aviation, many of us are accustomed to thinking of air power first in terms of military planes and next as commercial aviation, forgetting the civilian phase, which up to a few months ago was the largest of the three and can again become the largest."

For the duration, however, as more lightplanes are worn out or are taken for military use, the public must expect severe curtailment of opportunity to learn to fly, Johnson said, but the influence of the remaining civilian flyers who cannot go to war will continue to be felt even in areas which are entirely grounded.

"In their minds is the knowledge which can be a national asset only if conveyed to others. The ground training part of aviation is as important as flight training. This is being given in full measure to pilots with undeveloped skill and to CAP Cadets who are starting from scratch."

Speculating on the post-war prospects of private flying, Johnson said that although it would probably be an exaggeration to say it will at once follow the spectacular course of the automobile industry after the last war, "I think it fairly conservative to anticipate that there will be upwards of a million people who will want to fly for themselves as against 100,000 licensed pilots before the war.

Impressive Total

"Out of the air forces there will be a million or more men, accustomed to the flying and servicing of planes, who will want to stay in the air. Add to these the hundreds of thousands of civilians who have become interested in aviation and the millions of youngsters who are taking pre-flight courses in public schools. Discount these figures as much as you like and the remaining total is impressive.

"The influence of CAP has meant that this development can go forward rapidly after the war. With active units at more than 1,000 airports, the Patrol has maintained the momentum of home town aviation in all parts of the country. It has kept open many airports that otherwise would have been closed.

"After the war, therefore, there can be an immediate start without waiting for the setting up of new facilities . . . Private flying can increase immediately as new planes are available. Once the materials are released when peace comes, production of improved models on a mass scale will be a simple matter. Not only will the aircraft industry benefit but the demand for airline services also will expand because there is no group which uses air passenger, freight, express, and mail services more than the civilian pilots.

"New inventions such as the helicopter and glider tows may play their part. But we need not wait for innovations other than improvements tested and found feasible for the already safe and reliable lightplanes with which we are familiar.

"In addition to civilian flying, I look for greatly increased use of lightplanes for feeder lines such as have been demonstrated by CAP in courier services which are coming close to spanning the continent. If we are going to develop overnight mail service by air for all first-class mail, the villages as well as the cities must share in it. The demand exists. Now that the pilots of the Patrol have shown the way through the mountains and over the hills on many a route now being flown, skilled pilots will be ready to fly this service for everyone when the ending of the war gives them the equipment."

Referring to the flyers of the Civil Air Patrol, Johnson said "They ask little from the government except the bombs and life rafts they have been given; the privilege to buy a few repair parts for their planes, which has been granted; and the opportunity to do even more than they are doing," thus revealing that publicity over the CAP's long struggle to obtain parts and safety equipment has resulted in at least partial success.

CAP Pilots Honored

Maj. Hugh R. Sharp, Jr., of the CAP Coastal Patrol, and Ensign Edmond I. Edwards, both of Delaware, were recently decorated with the Air Medal by President Roosevelt at the White House, according to OCD. This award, the first made for civilian services, was for effecting a difficult rescue at sea last July 21 and 22. Edwards, now in the Navy, was then a CAP lieutenant. Sharp and Edwards, after a difficult landing in rough seas, made a "taxi" retrieve of Lt. Henry T. Gross, thrown clear from a CAP Coastal Patrol plane which had crashed about 20 miles offshore.

On the Warpath: Several Pima Indians have gone on the warpath against the Axis. Southwest Airways has hired the above group at Thunderbird II Field, new Army primary school. The Indians, several of them tribal chiefs, crank and refuel training planes.

Merger Links Flying Operations Among 13 Airports

Flying operations at 13 airports throughout the Southern states of Georgia, Alabama, South Carolina and Tennessee have been linked together with announcement Feb. 27 of the merger of the interests of Southern Airways, Inc., and affiliated companies, Augusta, Ga., and those of Georgia Air Service, Inc., Athens, Ga. The new company will be known as Southern Airways, Inc. of Georgia.

Purpose of the merger, according to announcement, is to "expedite the war work in which both companies are exclusively engaged at the present, and to lay the foundations for postwar expansion into aviation activities covering the entire Southeast."

Officers of the new company will be Frank W. Hulse, president, Cody Laird, Ike F. Jones and W. F. Underwood, vice-presidents, and Ben T. Smith, secretary and treasurer. Birmingham headquarters will be at Municipal Airport, and offices will also be maintained in the Protective Life building and at Roberts Field, in that city. In Atlanta, operations headquarters will be at Rickenbacker Field, with downtown offices in the Trust Company of Georgia building.

Merger of the 13 airports which were operated by the two former companies, announcement claims, makes the new company "one of the largest fixed base operators in the country and offers it unequalled opportunities for postwar expansion into airline operations, aircraft sales, service and maintenance, and any other phases of aviation."

Airport operations involved in the merger are those at the Municipal Airport and Roberts Field, Birmingham; Rickenbacker Field, Atlanta; Southern Airways CAA school at Candler Field, Atlanta; Army contract schools at Bennettsville, S. C., Camden, S. C., Decatur, Ala., and Jackson, Tenn.; airports at Greenville, S. C., Muscle Shoals, Ala., Augusta, Ga., Milledgeville, Ga., and DeKalb County's new Camp Gordon Airport, (Atlanta), when the Navy no longer requires its use.

Combined personnel includes more than 500 experienced pilots, "as many more trained mechanics and other aircraft specialists," and about 1,500 employes

NINETY-NINES: New officers of this organization, for women pilots, have been announced: President, Jacqueline Cochran, 630 Fifth Ave., New York N. Y.; vice president, Ethel S. Sheehy Arrow and Linden Sts., Fontana, Cal.; secretary, Fanny Leonpacher, P. O. Box 432, Lafayette, Pa., and treasurer, Alice H. Hammond, 70 Cambridge Road, Grosse Pointe Farms, Mich. Governors of the various sections are: Southwestern, Helen A. Kelton, 1110 Arcadian, Chico, Cal.; South Central, Gail R. Wilbur, Shreveport, La.; New England, Marjorie B. Davis, 25 Deaconess Rd., Boston, Mass.; Middle Eastern, Bette Thompson, 724 N. 63rd, Philadelphia, Pa., and Southeastern, Vera Self, 230 W. 19th, Jacksonville, Fla.

DELTA Skypaths

TRAVERSE A NEW INDUSTRIAL SOUTH

Ranging high above the wooded hills and fertile plains of the Southland, Delta has watched from aloft the shifting scene of industrial development toward this great sector of America. A South once linked inseparably with agriculture, now plays host to powerful industrial forces—extends her bounty of raw materials, favored climate and availability of great land and water areas. The South of today and tomorrow is an industrial South—rich beyond words in natural resources. To manufacturers seeking new and better production facilities, these are matchless advantages indeed to couple with the cooperation of a people strong in the spirit of freedom and enterprise.

Delta sky routes spread across this friendly land, where they have served for 18 years. And, for coming days of peace, Delta makes ready now for even greater usefulness to business and industrial leaders of the New South.

DELTA AIR LINES

DELTA Air Lines

NO LONGER "... SO FEW"

It is dusk. Today—September 15, 1940—the Royal Air Force won the battle of Britain. Then, the *Luftwaffe's* supreme effort was smashed... its rout completed, by a tiny group of fighting men whose feats have become legend.

Two years have passed... the tide has turned. Now the R. A. F. is Victory bound... its strength numbered in the thousands.

We are proud that many of these Empire pilots received PRIMARY, BASIC and ADVANCED flight training —earned their coveted wings—at our Falcon Field. To them—and to their many American flying comrades in the world's war-torn skies—who also first flew with the Thunderbird in Arizona's Valley of the Sun—each Southwest Airways worker pledges ceaseless effort, so that:

There shall be more, in ever increasing numbers!

SOUTHWEST AIRWAYS

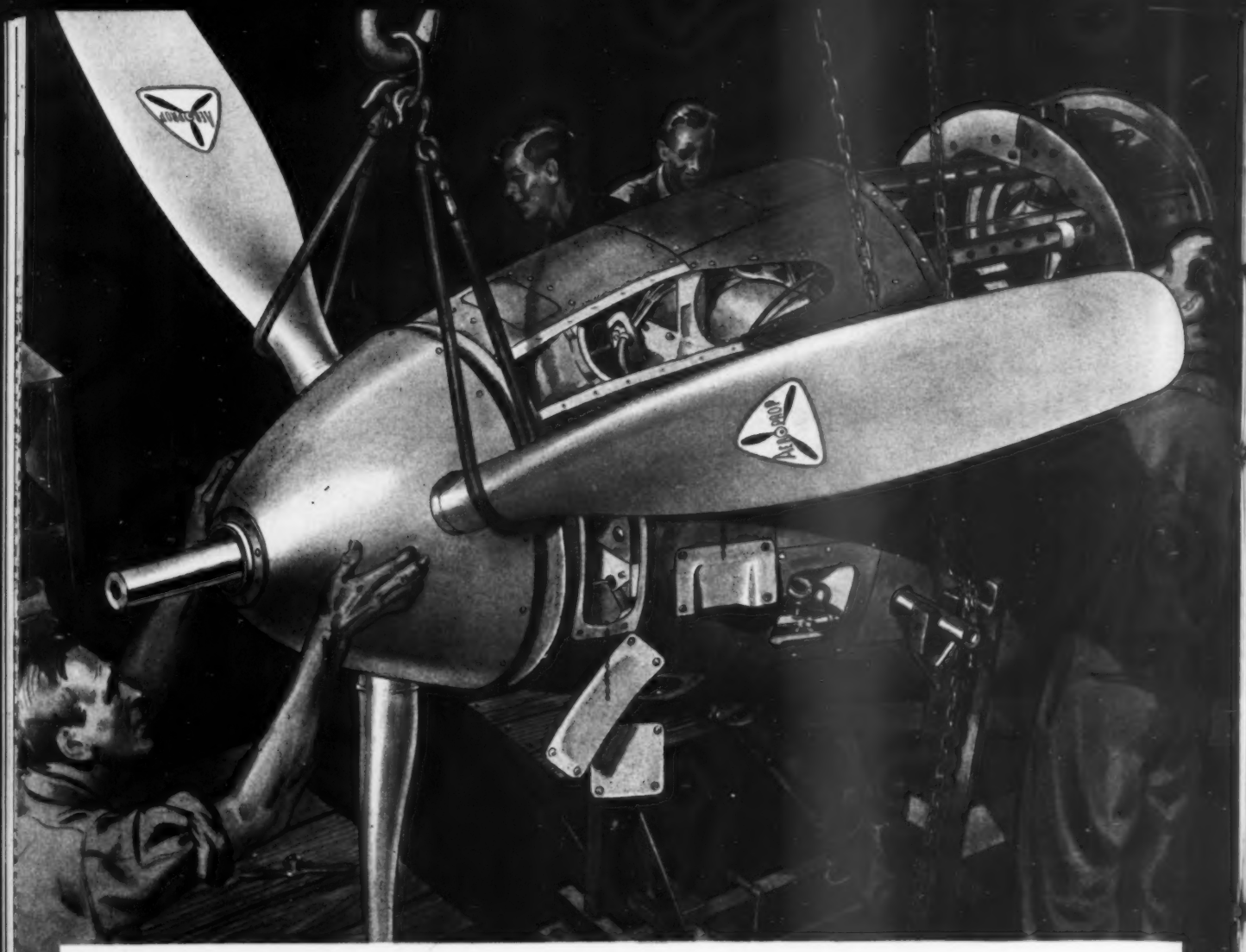
Phoenix, Arizona

THUNDERBIRD FIELD • FALCON FIELD • SKY HARBOR • THUNDERBIRD II

TRAINING THE FINEST FIGHTERS TODAY, THE FINEST FLYERS TOMORROW

CONTRACTORS TO THE UNITED STATES GOVERNMENT • UNITED STATES ARMY • UNITED KINGDOM GOVERNMENT

War Eagles
It has been our privilege to train a large number of pilots who have been decorated for their achievements against the enemy, and at the same time to maintain the nation's highest safety record. For the duration, Cal-Aero, Mira Loma and Polaris Flight Academies will devote their entire facilities and modern airport-academy bases exclusively to the training of Aviation Cadets for the U. S. Army Air Force.
THE OBJECTIVE OF THESE SCHOOLS IS TO TRAIN THE FINEST COMBAT PILOTS IN THE WORLD. THEIR TRAINING POLICY IS DEDICATED FIRST TO SAFETY AND SECOND TO TECHNICAL PERFECTION.
C. C. MOSELEY, President
MIRA LOMA FLIGHT ACADEMY
OXNARD · CALIFORNIA
POLARIS FLIGHT ACADEMY
WAR EAGLE FIELD · CALIFORNIA
CAL-AERO FLIGHT ACADEMY
ONTARIO, · CALIFORNIA



Another "slugger" off the line... complete with *Aeroprop!*

IT'S LIGHT — The Aeroprop is engineered for maximum strength without useless weight. Excess weight reduces plane efficiency.

IT'S STRONG — Propellers on combat planes take a terrific beating. The Aeroprop is built to withstand abuse and to 'stand up' under stress of combat service.

IT'S SIMPLIFIED — The Aeroprop is unit-constructed, which means that automatic pitch control, plus the power for pitch changes, are right in the compact propeller assembly itself.

One of America's finest fighting ships has earned a hard-boiled nickname—the *slugger.*

The slugger shown above is getting its Aeroprop.

You'll notice one particularly interesting fact in this production-line view of a fighter in the making. The Aeroprop is going on the ship as a single, compact unit. In a matter of minutes the complete propeller will be fully installed and ready for flight.

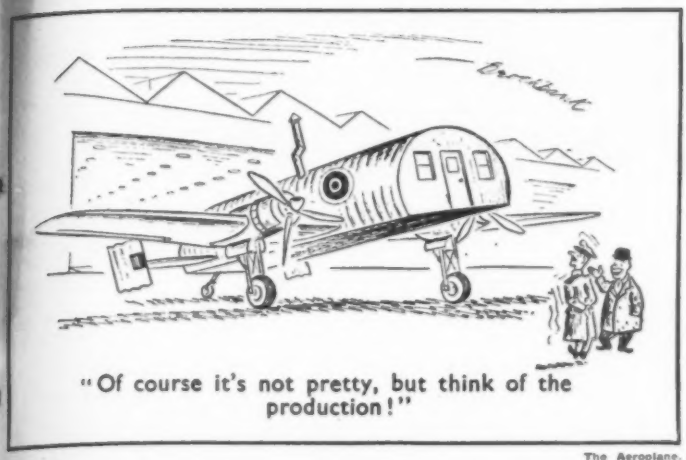
Thus, the Aeroprop saves installation time, but it also saves time that's even more precious. Compact unit-construction makes it possible to check and service an Aeroprop in double-quick time, and that is a big advantage at the fighting front. When the heat is on, every maintenance minute saved is a fighting minute earned.

From steel blade tip to hollow hub the Aeroprop is engineered for top combat efficiency. It is rugged, strong, light. With each passing day the Aeroprop's performance becomes an increasingly decisive factor in America's air strength—because every day more and more planes are going off the production line and onto the fighting line—*complete with Aeroprops.*

AEROPROP

AEROPRODUCTS DIVISION **GENERAL MOTORS** CORPORATION

GM ARMS FOR VICTORY



"Of course it's not pretty, but think of the production!"

The Aeroplane.

Letters

Boston, Massachusetts

To the Editor:

My attention was called to the January 15th number of your magazine, page 10, where there is a reference to George P. Baker who is now a Lt. Col. in the Army Air Corps. I am writing you because I know Mr. Baker very well and feel rather badly that your magazine takes a crack at him.

I naturally admit that it is the function of good journalism to keep government agencies alive by constructive criticism. I believe that this is even more important in wartime than it is in peace. But I question whether the man who wrote this article really knew Baker, or if he did, whether he gives an unbiased picture of him. From our judgment at this School, from which he is on leave of absence, he is one of the best men in the whole aviation field and the more effective because he is quiet and judicial. I doubt if he sat around waiting for business to come in. I wish the criticism did not sound so much like some of our most superficial weekly columnists who hit out indiscriminately and claim by inference an intimacy with a picture about which they only know the names involved.

I do not claim to know everything, or much of anything, on this subject, but I *do know* that this article of yours is a superficial judgment.

PHILIP HOFER
Assistant Dean,
Graduate School of Business Administration, Harvard University

(Editor's Note: Reader Hofer jumped at conclusions, was as far from reality as many Harvard academicians who believe the cloistered scholastic life fits them for public duty. Aviation folk knew what we meant when we said George P. Baker "secluded himself in judicial robes and sat around waiting for business to come in." Reader Hofer obviously did not. No one questions sincerity or integrity of able Lt. Col. Baker. Reader Hofer's remark about "superficial judgment" might well be used the other way around. Or the remark is applicable if one must accept only one group of Harvard thinkers as the official interpreters of the Civil Aeronautics Act of 1938.)

•

Fort Wayne, Ind.

To the Editor:

The enclosed United Press story has prompted me to offer on my radio program "Plane Talk" a $50 war bond.

This war bond will be paid to the person sending me an "Air Pocket"; either a photograph or an "Air Pocket" in a container will be accepted. I will not pay any charges, as I do not know what an "Air Pocket" will weigh.

This offer goes on the air Monday, March 1st, which is my regular night of broadcast, at 8:15 P.M. I have had this program on the air for the past six years.

I have been hanging around airports for the past 16 years and have my first "Air Pocket" to see or encounter. I would like to have an "Air Pocket" to add to my collection.

BOB SCHOTT
Airport Manager
Smith Field Municipal Airport

(Editor's Note: The U.P. story quoted a Pan American Airways official as saying the Clipper, which crashed at Lisbon Feb. 22, "ran into an air pocket" but U.P. may well have garbled the airline's explanation. It wouldn't be the first time newspapers distorted crash reports. What does PAA have to say?)

•

St. Paul, Minn.

To the Editor:

I want to congratulate you on your editorial in the February 1st issue of *American Aviation*, "Time for Getting Smart," also "U. S. Launches World Air Policy Study," not because you happened to mention me in one of these articles, but because I believe now is the time for everyone interested in aviation to put forth every possible effort to see to it that something is done in securing for this country the international rights we are entitled to. We sure as hell won't get them after the war if we don't get them now.

CROIL HUNTER,
President
Northwest Airlines, Inc.

•

Chicago, Ill.

To the Editor:

May I congratulate you on the excellence of your editorial material, and tell you that I've never seen a trade publication so well engineered to its industry.

CHESTER FAUST
J. Walter Thompson Co.

★ ★ ★

People

William P. Briggs, assistant to the first vice-president of Eastern Air Lines, together with a group of EAL traffic men, participated in the annual dinner of the Rod and Gun Editors' Association at the Ruppert Brewery in New York Feb. 24. . . . **Lt. Col. P. C. Sandretto**, formerly a radio expert for United Air Lines, is now on foreign duty . . . **Hal C. White**, flight superintendent in Atlanta for Delta Air Corp., has been awarded the Patriotic Service Cross of The United States Flag Association, Washington.

Sandretto

Jack Klein, who is credited with helping to build the first Bleriot monoplane to cross the English Channel back in 1909, is now an inspector in the Newark Division of Brewster Aeronautical Corp. . . . **E. Theodore Stern**, well known publicity counselor, has added to his accounts representation of Douglas Aircraft Co., in Washington and New York . . . **George H. Scragg**, advertising manager of White Motor Co., Cleveland, is now editor of "The Beam", official publication of the Early Birds, which was formerly published on the West Coast . . . **C. T. "Tom" Busha, Jr.**, is public relations counsel for Byrne Doors, Inc., Detroit, and commutes from his home in Great Falls, Mont., which he helped put on the Alaska-Canal Zone air route map, and points East . . . **P. E. Nicholls, Jr.**, a Texan, operates the company's offices in the National Press Building, Washington . . . **Miss Jane Hill** is the first draftswoman to be employed in the engineering department of TWA (Kansas City).

Jane Hill

Brig. Gen. Bennett E. Myers, U.S. AAF, was recently married in New York to Ila Rhodes, film actress . . . **Henry Berliner**, well known engineer and former president of Engineering and Research Corp., Riverdale, Md., and now a colonel in U.S. AAF, European Theater, was recently reported in the press as participating in a raid over Germany as a waist gunner on a Flying Fortress . . . **Igor Sikorsky** will speak at Florida Southern College March 20.

One man who sees and knows everybody in Washington is popular **Les (Romec Pump) Hull** whose Rogers Smith apartment is an industry gathering spot . . . Title as No. 1 stewardess for the month goes to petite, cheerful and capable **Polly Curry** on American's milk-run local through Elkins and Huntington between Washington and Chicago . . . Seen in deep discussion at the Carlton: Able and capable **Bob Kinkead** who is making his mark as **Jim Murray's** assistant in the Boeing offices in Washington, and **Tom Collison**, former EAL publicity who is now masterminding Boeing's eastern publicity through N. W. Ayer in New York . . . United Air Line's brain-truster **Hal Nourse** and his assistants including **Chuck West** and **John Brinkman** are giving a course on the principles of air transportation at Northwestern University. **Sid Nesbit** of Lear Avia. Inc. recently skyrocketed into fame as Nidney Sesbit in Zack Mosely's comic strip, "Smilin' Jack".

Allen Memorial

Boeing Aircraft Company's wind tunnel and laboratory facilities, which were planned and developed under the supervision of the late Edmund T. Allen, will be named the Edmund T. Allen Memorial Aeronautical Laboratories, company has announced. Construction to house these facilities were described as "nearing completion," and full operation is expected to begin by mid-summer. Allen, Boeing's director of flight and aerodynamics, was killed in a plane crash Feb. 18.

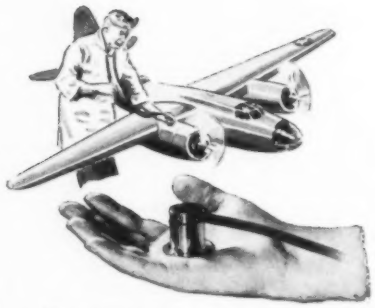
SAWE Conference

Society of Aeronautical Weight Engineers will hold its third annual conference at College Station Texas, May 3, 4 and 5, according to announcement.

XUM

IRONING OUT THE JITTER-BUGS IN BOMBERS!

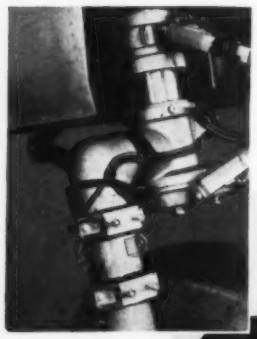
Martin Research in Vibration and "Flutter" has interesting possibilities in many industrial fields



No larger than a silver dollar, the "electric ear" that picks up vibrations.

FLUTTER, bane of aircraft builders and constant threat to test pilots, need no longer be the subject of "trial and error" research, as a result of findings recently announced by The Glenn L. Martin Company. Moreover, in seeking the origin of this deadly vibration which caused planes to shake apart in mid-air, Martin's unique Vibration Department has achieved results of unusual interest to all industry.

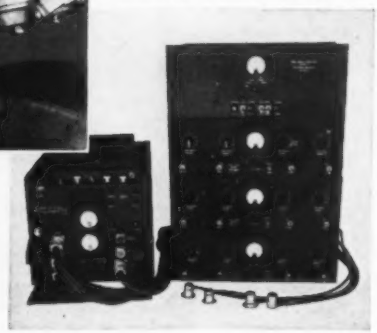
Interesting methods and weapons have been developed for this six-year war against vibration. First, was the development of an electric vibrator to set up artificial vibrations in plane parts and structures, simulating actual flying conditions. Coupled with this are the accelerometer and an oscillograph, used to detect and graphically record the vibrations under study. Both of these devices and use-techniques were products of the Martin Vibration Department. Martin research men are now able, by plotting a graph, to determine the air speed at which vibrations in various plane parts will harmonize to cause flutter and structural breakdown. If this critical speed is well above the design dive-speed of the plane, there is no danger of flutter. The same devices also provide a powerful weapon against another enemy of extreme speed in planes—compressibility. Now available to other aircraft companies, this Martin equipment along with Martin graphs and formulas, makes it possible to determine the flutter characteristics of new models during flight tests. Thus lives and costly equipment are no longer endangered by flutter, while U. S. Bombardiers are assured of steadier platforms and greater accuracy on bombing missions.



In Action on nose landing wheel, equipment records landing shocks, in much the same way that vibrations are detected and recorded.

☆

Accelerometer, below amplifies vibrations picked up by little "electric ears" (in foreground). At left is oscillograph which records findings.



New Horizons For All Industry

In addition to aiding the fight against flutter, Martin equipment is being used to determine dynamic shock and to help overcome motor vibration. This latter field holds far-reaching promise for all industry in the postwar years. Automobiles, trucks, busses, steamships, trains . . . all may be made lighter, more comfortable, smoother-riding. Buildings, housing heavy machinery, will be able to minimize rumblings, vibrations. Delicate mechanisms such as radio equipment will be better mounted for better performance.

Arch-enemy of both structural vibration and resultant human fatigue, Martin vibration research promises to play an important role in building the world of tomorrow.

If the minimizing of vibration will improve your postwar product or plant, tear out this page for your future plans file.

The Glenn L. Martin Co., Baltimore, U.S.A.

Martin
AIRCRAFT

Builders of Dependable Aircraft Since 1909

Member: AIRCRAFT WAR PRODUCTION COUNCIL, EAST COAST, INC.

XUM

Heard this one about the traveling salesman?

It's about a post-war traveling salesman who made calls on customers in six different towns in one day—and the one he saw at 4:30 in the afternoon was 600 miles away from the city where he ate breakfast! After the war, such lightning covering of sales territories will be commonplace. Any salesman will be able to do it—flying in his own plane!

That plane may be a roadable, folding-wing monoplane; it may be a helicopter; or perhaps a type as yet unheard of. But whatever its shape, chances are it will be powered by a light, economical Franklin engine. For 43 years the genius of Franklin engineers has produced ever-finer air-cooled engines. Franklins were used by every major producer of light planes before the war. Today they are serving in Army and Navy warplanes. And already Franklin engines have powered the leading experimental types—the forerunners of the private-owner planes soon to come. Look for Franklin power in *your* post-war plane.

AIRCOOLED MOTORS CORPORATION
SYRACUSE, NEW YORK

Franklin
AIRCRAFT ENGINES

XUM

Small Airlines Protest Against CAB Pound-Mile Mail Rate Policy

Say Treatment Must Differ From Large Lines

By ERIC BRAMLEY

URGING the CAB not to adopt a policy which one company said would "tend toward the enrichment of the rich, while the poor get poorer," several of the smaller airlines have pointed out to the Board that their air mail rate problems must not be treated in the same manner as those of the larger air carriers.

Western Air Lines, Braniff, Chicago & Southern, Delta and National have filed objections to the recent action of the Board ordering them to show cause why their air mail rates should not be set at .3 mill per pound-mile.

Because of the Board's decision not to recapture so-called "excess" earnings, the large airlines have been permitted to accumulate reserves which will place them in a favorable position for post-war expansion, it is argued. On the other hand, the smaller lines, just now coming out of the red, are immediately faced with the prospect of substantial mail pay cuts before their reserves have been built up.

Western Air Lines, in telling the Board that its pay should be at least .9 mill, made the following statement which is believed to reflect to some degree the feelings of other smaller lines:

Need Capital

"When the war has terminated, it is reasonable to expect that a substantial expansion in air transportation of both passengers and cargo will result. All existing airlines, both large and small, will need increased capital in large amounts to be obtained either through bank loans or stock issuance. To successfully accomplish either, it is necessary that financial organizations and the public have a fair regard as to the earnings possibilities of airlines and the probable future treatment they will receive from the government under the Civil Aeronautics Act. In the matter of new financing, the smaller carrier is not as favorably situated as the larger carriers. The latter have enjoyed substantial earnings, have spent large sums for national advertising, have built up strong cash positions and increased their surplus, are all listed on the New York Stock Exchange, and otherwise are well entrenched.

"A large part of this has been accomplished through air mail payments received in prior years. The smaller air carriers have not enjoyed these advantages. Therefore, it is the position of Western that the Board should treat the smaller carriers as well as it has treated the larger carriers in the matter of the stabilization of their financial position through appropriate air mail payments, and that special consideration should be given to the smaller carriers to enable them, in view of their weaker position, to build themselves up to a strong position to deal with post-war aviation problems.

Profitable Interim

"The majority of the larger carriers reached a self-sustaining basis several years ago but their mail payments were not immediately, nor until lately, drastically reduced. During the profitable interim the larger carriers were able to and did build up to their present strong positions. Such has not been the case with Western. As it now approaches a so-called self-sustaining basis, the Board proposes to cut its mail revenues 75%, which will allow no strengthening period as was allowed the larger carriers . . . It is the contention of Western that some distinction should be made between the larger and the medium sized and smaller carriers in fixing rates regardless of whether the rate is expressed in terms of per mile or per pound-mile. Failure to do so will represent a complete departure from previous thought on this matter by Congress and would be contrary to the Declaration of Policy . . . of the Civil Aeronautics Act and would tend toward the enrichment of the rich, while the poor get poorer."

Braniff Airways protested that the .3 mill rate "is discriminatory as far as the smaller lines are concerned, because of differentials in mail loads carried. The result . . . would be that the transcontinental carriers would receive mail compensation far in excess of that being received by the smaller lines, even though the relative 'need' of smaller lines . . . would actually be greater.

"The application of such a universal rate fails to consider that the cost of carrying a small quantity of mail is identical with the cost involved in carrying a large quantity of mail and that this cost can only be met by a graduated rate predicated upon the volume of mail carried."

The airlines filing objections with the Board also revealed that under their new Army contracts, which supersede previous contracts, a greater allocation of expense falls on the commercial side of the business. Delta pointed out that these contracts have been "radically altered, resulting in large sums of money involved in the expense accounts aforementioned being transferred from the war services of respondent to the commercial services. Inasmuch as these sums of money are charged against the commercial operations of respondent the reallocation of same has resulted in a substantial increase in airline operation costs, the precise extent of which cannot be fully determined before the end of the fiscal year, but which definitely indicate an increase in operations costs such as will fully nullify the estimate of the Board in the instant proceeding."

'Discriminatory'

National expressed its views by stating that: "Objection is made to the proposed adoption of a pound-mile rate for mail compensation for respondent's operation, for the reason that respondent was never close to self sufficiency except during the comparatively short and completely abnormal period since the entry of the U. S. into the present war. A pound-mile rate on the basis proposed is not in accord with respondent's need and compensation on such basis is unfair, unreasonable and discriminatory as between respondent and the larger carriers. Furthermore, the application of a pound-mile rate . . . disregards its need for earnings sufficient to insure its credit, and to keep it in a position to attract capital readily, when it becomes possible to secure new and additional equipment."

What CAB's next step will be has not been indicated. Public counsel has urged that rate proceedings in the above cases continue. It is possible that the lines will be permitted to argue their cases orally before the Board before further action is taken.

43,835 Miles of Pick-up Routes Sought

A total of 43,835 miles of pick-up routes is being sought in applications now on file with the Civil Aeronautics Board, according to a recent compilation. CAB lists 22 pending applications covering 100 routes in 29 states. A total of 2,634 cities are listed in the applications (1,437 if duplications are eliminated). Companies with applications on file are Aero Pick-Up Service, All American Aviation, Automatic Air Mail, Century Aviation Co., Des Moines Flying Service, Mercury Development, Mid-Continent Airlines, Page Airways, Rebel Air Freight, Southern Aviation Corp., Southwest Airways, Southwest Feeder Airlines, United Air Lines, West Coast Airlines and Western Air Lines.

Otis Bryan Named TWA Vice President

Otis F. Bryan, general manager of TWA's Intercontinental Division, was elected a vice-president of the company on Feb. 24.

Bryan

Bryan, who has headed ICD since shortly after the outbreak of the war, recently flew President Roosevelt on part of his flight to Casablanca.

Born in Crothersville, Ind., on Jan. 3, 1908, Bryan is a graduate of the University of Indiana. He was in the Air Corps from 1927 to 1929, joining TWA in the latter year. In 1939, when only 30, he was made chief pilot of the company, serving in that capacity until June, 1941, when he became general manager of TWA's special four-engine flight training division at Albuquerque. His next promotion was to the general managership of ICD.

.3 Mill Mail Rate Proposed for NWA

CAB has ordered Northwest Airlines to show cause why its air mail pay should not be set at .3 mill per pound-mile, effective from Mar. 1, 1943.

Under such a rate, the Board asserted, NWA would receive mail pay of $862,273 yearly, resulting in profit before taxes of $668,995, and net after taxes of $401,397.

Total non-mail revenues of NWA for a future year will be $2,679,049, CAB said, giving the following break-down: passengers, $2,272,826; express and freight, $297,692; excess baggage, $57,640; Canadian mail, $26,240 and miscellaneous, $24,651.

Operating expenses, the Board added, will total $2,872,327, divided as follows: flying operations, $839,759; ground operations, $500,000; flight equipment maintenance—direct, $394,398; ground equipment maintenance—direct, $50,000; equipment maintenance—indirect, $130,832; passenger service, $210,853; traffic and sales, $297,669; advertising and publicity, $80,000; general and administrative, $179,690; depreciation—flight equipment, $173,692; depreciation—ground equipment, $15,434.

United Airlines has reported gains in scheduled operations during 1942, as compared with 1941, except for revenue airplane miles. Following figures, with 1941 in parentheses, include estimated totals for Dec. 1942: Revenue passenger miles, 293,000,000 (271,908,353), up 8%; mail ton miles, 6,747,000 (3,724,701), up 81%, and express ton miles, 3,732,000 (1,623,840), up 130%. These increases were attributed by the company to efficiency of operations and unprecedented use of space. Additions to the payroll in 1942 raised the total of employes to more than 6,000.

CANADIAN PACIFIC AIR LINES

Were he alive in the post-war world of tomorrow, Horace Greeley might well say, "Go north, young man, go north!"

For in Canada's Northland lie the world's greatest untapped resources . . . undiscovered wealth. There, north of the 53rd parallel, are over 1,500,000 square miles of largely undeveloped riches . . . minerals, timber, fuel. There are the air bases for short "roof-of-the-world" air lines to Europe and Asia . . . THERE IS THE FUTURE!

Already, Canadian Pacific Air Lines has laid the foundation for the north that *is to be.* A large fleet of modern planes, with an annual flying mileage of over 5,000,000 plane miles, steadily brings the north nearer to settled industrial centres. Today war cargoes fill these planes. Routes connect with Trans-Canada Air Lines and the leading United States air lines.

Yes, the north is opening. When victory is won, Canadian Pacific Air Lines will open it . . . wide . . . wide . . . WIDE!

Canadian Pacific

AIR LINES

The Wings of the World's Greatest Travel System

CAB Approves Revised Air Express Contracts; REA Monopoly Eliminated

Restriction on Rates Also Removed

AIR express contracts between the U. S. domestic airlines and Railway Express Agency were approved by the Civil Aeronautics Board on Mar. 4.

They were, however, contracts which were in many respects greatly different from those under which the airlines have been operating during the past several years.

The provision giving REA a monopoly in the air express business had been removed, as had the section stating that air express rates must be at least twice first class rail express charges.

By approving the contracts, CAB cleared up a situation that has been muddled since the Civil Aeronautics Authority came into existence in 1938. On Oct. 31, 1939, CAB instituted an investigation to determine whether the contracts were adverse to the public interest. This investigation was later postponed at the request of the airlines, and no action was taken until November, 1942, when the Board addressed a letter to all airlines requesting certain changes in the contracts. These changes were made during the past fortnight, and Board approval was promptly given.

No Anti-Trust Action

Thus, for the first time since passage of the Civil Aeronautics Act, the air express contracts are immune from any action which the Dept. of Justice might seek to take under the anti-trust laws. The Act provides that any person affected by any order made under section 412 of the Act "shall be, and is hereby, relieved from the operations of the 'anti-trust laws' . . . and of all other restraints or prohibitions made by, or imposed under, authority of law, insofar as may be necessary to enable such person to do anything authorized, approved, or required by such order."

The Dept. of Justice has been interested in the REA contracts for several months. In the current issue of *The American Mercury*, Thurman Arnold, Assistant Attorney General in charge of anti-trust prosecutions, said: "After the war broke out in Europe, we announced our intention of becoming the arsenal of democracy, and discovered we had only 365 commercial planes. We were carrying less air freight than South America. The development of competitive transportation had been stifled to preserve the railroads' position. An exclusive contract between the Railway Express Agency (a wholly owned railroad subsidiary) and 23 domestic airlines provided that no air express rate could be less than twice the rate charged on the railroads. Actually, the air rates were held at five to seven times railroad rates. Another provision of the contract gave exclusive control of all cargo on the domestic airlines . . . to the Railway Express Agency."

Whether the Dept. of Justice is satisfied now that the controversial clauses have been removed has not been indicated.

Airlines 'Freed'

In approving the contracts, the CAB said: "Air transportation has reached now a stage of development at which it appears clearly essential that the airlines be freed from certain of the restrictions imposed by the contracts in order that they will be in a position to move in whatever direction the public interest may require in the future in the development of cargo service.

"The contracts provided that the air carriers will not accept express business from any person other than the Express Agency and provided that the Express Agency will not make an agreement with another air carrier for a similar service without meeting certain restrictive conditions. It appeared to the Board that these restraints should be eliminated. In addition, while the contracts provide specifically that the air carriers will establish the rates to be charged by the Express Agency for the transportation of air express, they contain a provision by which the air carriers agree not to reduce rates to a point below twice the rail express rates without the consent of the express company.

"This provision has been of no practical importance since the air express rates have been maintained by the air carriers at a point much higher than twice the rail express rates.

"Nevertheless, it appeared to the Board that the provision should be eliminated in order that air express rates could find their own proper level without regard to those being charged for the transportation of express by rail.

Can Fly Planes

"The contracts also contained a provision by which the Express Agency was forbidden to enter into the air express business by operating its own aircraft. Since under the Act the Railway Express Agency could not perform such a function without securing the approval of the Board and the issuance of a certificate of convenience and necessity, it was considered desirable to have this provision removed. . . .

"Upon consideration of the provisions of the contracts as revised, we see nothing which would justify us, in the light of existing conditions, in finding that they are adverse to the public interest or in violation of the Act, and therefore they should be approved."

The Board nevertheless left the door open for further consideration at a future date. It pointed out that it can at any time disapprove a contract, "whether or not previously approved," if it finds that such contract is adverse to the public interest.

". . . In our evaluation of the public interest as affected by the express contracts, we have necessarily recognized the existence of the present emergency," the Board said. "We will therefore be prepared to give further consideration to a final determination of the express agency-air carrier relationship when the public interest warrants."

Observers agree that because of the major wartime role now being played by the airlines, the contract amendment will not change the express situation materially at this time. However, it is agreed that as a basis for expected post-war expansion, the amendments are of great importance.

REA on several occasions at hearings before CAB has stated that it has no intention of operating its own aircraft. There has been nothing to indicate that the agency has changed its mind, but some observers pointed out that, with contract restrictions removed, the railroad-controlled group is free to attempt to operate its own air routes, provided it could obtain CAB approval.

Congratulations: General Alberto Salinas Carranza, chief of Mexican civil aviation (second from left), congratulates Capt. Marcial Huerta Jones of Compania Mexicana de Aviacion on inauguration of Latin America's first night flying route from Los Angeles to Mexico City. Wilbur L. Morrison, left, head of CMA, which is Pan American Airways' Mexican affiliate, planned the new lighted airway.

Women Take Over: Four of the women now in charge of United Air Lines' traffic offices are shown at a recent traffic conference in Chicago. Left to right, Iris Beals, acting district traffic manager at Boston; Ruth C. Ruhl, acting district traffic representative at Des Moines; Cherie A. Smith, acting dtm at Toledo, and Kay Gerish, holding a similar position at Detroit.

Traffic

NORTHWEST AIRLINES, Inc., because of weather-caused flight cancellations, had decreases from Jan. 1942 in revenue passengers carried and revenue passenger miles operated in January, 1943. Revenue passengers totaled 4,026, and revenue passenger miles amounted to 2,612,999. But the 280,979 lbs. of air mail transported in Jan. 1943 was a gain over the 222,877 lbs. in Jan. 1942, and air mail pound miles of 236,360,979 in Jan. 1943, showed a large gain over the 164,770,841 performed in the 1942 month. Air express carried in Jan. 1943 totaled 125,524 lbs., "a new monthly record," and a gain of 45,437 lbs. over the 1942 month. In the 1943 month, air express pound miles amounted to 85,310,694.

TRANSCONTINENTAL AND WESTERN AIR, Inc., reports it carried three times as much express and twice as much mail in Dec. 1942 as in Dec. 1941, and that Dec. 1942 business was handled with approximately half the number of planes as were operated in the same month of 1941. Comparative data of 1942 and 1941 operations, with increase or decrease, follow, with 1942 figure first, followed by 1941 in parentheses: Air express pound miles, 4,822,054,000 (1,823,831,000), up 164.39%; air mail pound-miles, 7,677,661,000 (4,979,051,000), up 54.20%; revenue plane miles 16,839,676 (19,664,811) down 14.41%, and revenue passenger miles, 201,783,686 (202,483,452), down .35%.

UNITED AIR LINES reveals large gains in operations during Jan. 1942 over Jan. 1941. Revenue passenger miles totaled about 20,242,900, 16% more than the 17,450,164 operated a year earlier. Air express pound miles amounted to 668,426,000, a gain of 13% over the 538,351,841 in the previous year. Air pound miles were 1,452,107,000, 97% over the 735,957,612 flown in Jan. 1942.

TRAINING *for you*

MEN YOU CAN TRUST, to fulfill the exacting requirements of the aviation industry. Curtiss-Wright Technical Institute with an unsurpassed faculty of practical engineers and technicians, PROVED, TESTED and DIRECTLY PLANNED courses, has for many years taken great pride in training for you, QUALITY graduates for QUANTITY production.

CURTISS WRIGHT TECHNICAL INSTITUTE

MAJOR C. C. MOSELEY, PRESIDENT SINCE ITS INCEPTION AND SOLE OWNER

GRAND CENTRAL AIR TERMINAL
GLENDALE (LOS ANGELES) CALIF.

CONTRACTORS TO THE
U. S. Army Air Forces

THIS TOWER OVERLOOKS AVIATION'S MOST DISTINGUISHED SCHOOL OF AERONAUTICS • FOUNDED IN 1929

New Canadian Post-War Program Includes Big Aviation Plans

NEW indications that the Dominion of Canada is preparing to marshal its airline and aircraft industries for all-out post-war competition with the U. S. are seen in Canadian government and press discussion during the last fortnight.

Canada hopes to be the center of the busiest aerial cross-roads of the world, but she is frankly asking herself: "Can our air industry survive the peace, and plunge successfully into post-war competition with the United States and the United Kingdom?"

Two aeronautical items rank high on a 19 point post-war reconstruction program just outlined by a group called together from all the heavy and durable goods industries of the Dominion. These are:

1. "To assist in encouraging the establishment of airports in every municipality."

2. "To establish skyways in various urban centers to relieve traffic, with air traffic landing decks for aerial taxi purposes and local aerial lines."

Selected as the vehicle through which the post-war planning committee is being set up is the Canadian Institute of Steel Construction, Inc.

Scrutinizing the record of manufacturing and flying, the *Toronto Financial Post* sees the post-war period as a challenge to management.

"For the aggressive leaders of both the production and operational branches of the industry, the gloomy record of the last post-war period is no more than a challenge and a warning for the period that lies ahead," says *The Post*.

Must Cut Costs

Successful transition to peacetime activity by Canada's aircraft industry, it concludes, will depend upon ability to cut costs, strengthen designing skill and develop cargo as well as passenger traffic. That considerable progress is being made in these directions is indicated by the record.

In World War I Canada turned out some 2,900 planes and provided 12,902 men for the Royal Air Force and the Fleet Air Arm, including some of the greatest flyers of the war.

Yet shortly after the war the aircraft industry had become practically non-existent. Not until the late 1920's did flying get its second wind, and by 1929 there were only 349 licensed civilian pilots in the Dominion.

Development of the North country gave Canada top place in air cargo during the 1930's, but even at the 1937 peak the total of licensed civilian pilots reached only 449—and two years later the number was back to 357.

The total number of planes built in Canada between the wars was only 981, less than three months' production at current rates, according to figures compiled by *The Financial Post*.

"On the face of that record," it concludes, "the major post-war job for Canada's aviation industry would be to find new jobs for the 100,000 production workers and 200,000 odd trained fliers and ground crew that Canada will likely have at that time."

Canada's Director General of Aircraft Production, Ralph P. Bell, who has led the Dominion through the difficulties of attaining quantity production, makes it clear that the next big job is to bring production costs down to the levels of the major producing units in the U. S. and Great Britain, and to build up Canada's ability to design as well as build aircraft.

Only two of the nine types of planes being built in Canada were designed there. On the cost angle, Bell revealed that a contract of Canadian Vickers to build PBY Catalinas was placed at the same figure Consolidated in the U. S. was receiving—thus showing that costs can be conquered.

Before the war Canada had about 1,000 aircraft plant employes, but the total will reach probably 100,000 by the end of 1943. The industry now occupies a factory floor space of some 7,000,000 square feet, as compared with 500,000 pre-war. The growth must also be measured in evolving of new production techniques.

Manufacture of aircraft parts has spread throughout the Dominion in dozens of plants. Highly specialized tools have been developed. Increasing use of plywood has led to a broad subcontracting system—and Canada has unlimited plywood resources. The air industry has brought a big boost in Canada's aluminum producing capacity and progress has been made in the standardization of alloys and sizes. Compulsory scheduling has provided an even flow of materials. Two types of metal propellers—the Hoover and Hamilton—are being made in Canada, and aircraft instrument production has been developed successfully.

Illustrating ability to convert, a Canadian furniture factory is now making a plywood bomb door every 13 minutes. The cost, *Canadian Aviation* reports, is half or less the cost for comparable jobs done in metal.

9 Types

Being built in Canada are the Lancaster, the Catalina PBY-5, the Curtiss Helldiver, the Hurricane, the Bolingbroke, the Fairchild Cornell, the Harvard, the Anson and the Noorduyn Norseman.

At war's outbreak there were something like 40 aircraft produced annually in Canada. Today there is a production of about 400 planes a month.

Just how Canada will be able to perform on a cost basis in comparison with other countries should be established by the end of this year, through large scale production of modern types of aircraft identical with those manufactured in Britain and the U. S.

On the travel side, the shift in geography portends many opportunities for development in Canada. "Long distance air travel has recast the map of the world, putting its center at the North Pole instead of the equator," one writer says. "Traffic from most of North America to most parts of Europe and Asia now naturally passes through Canada. Even in the bush flying days penetration of Canada's north was tributary to an east-west development paralleling the railroads. After the war north-south traffic will almost certainly become a main route instead of a spur line."

For this development, say the Canadians, "we bring to the job probably the greatest wealth of experience in Arctic flying of any country, with the possible exception of Russia."

Canada's largest airline operators look to the future too.

Says H. J. Symington, K. C., President of Trans-Canada Air Lines: "When the war is over and new equipment is available . . . We have plans for a shorter route across the continent, crossing the Great Lakes to Winnipeg and thence to points of exit in Western Canada and the Yukon Territory. Canada occupies an important position in the future of the air world. It is on the great circle, it is the shortest way and it has stable weather."

L. B. Unwin, President of Canadian Pacific Air Lines, says: "Canadian Pacific, as a long-established worldwide transport system, will undoubtedly through the extension of its air operations take its natural place in the development of world trade and travel routes to meet the almost unpredictable demands of the coming air age."

Passenger-Cargo Personnel: American Export Airlines' first training class for new passenger-cargo department personnel recently completed its first course of instruction, which covered details of company procedure connected with handling of passengers and cargo both in the U. S. and at foreign stations. Members of the first class, shown here, are, left to right, seated, Eliza Gough, Dorothy Love and Walter Hitchcock; standing, George Bright, Natalie Lambing, Pierre Barbet and Dorothy Arnold.

Traffic

UNITED AIR LINES reports an all-time high average of 1,156 lbs. per flight of air mail transported on its New York-Chicago-San Francisco run during December 1942. Average for United's entire coast-to-coast and Pacific Coast system was 1,046 lbs. during the same period. With an estimated 40 letters to the pound, this indicated an average of over 46,200 air mail envelopes on each of the firm's passenger-cargo Mainliners.

NORTHWEST AIRLINES, Inc., has announced large gains in 1942 over 1941 in airmail pounds and airmail pound miles, despite fewer schedules. Airmail carried in 1942 totaled 3,113,184 lbs., contrasted with 2,560,869 lbs. in 1941. Airmail pound miles in 1942 amounted to 2,528,042,954, against 1,871,311,191 in the previous year. Month by month figures for 1942 are presented here, first air mail pounds, then airmail pound miles in parentheses: Jan., 222,877 (164,770,841); Feb. 221,550 (164,810,258); March, 265,121 (198,314,621); April, 287,286 (205,226,506); May, 276,848 (201,791,260); June, 224,544 (188,132,712); July, 243,926 (209,169,046); Aug., 257,394 (219,963,892); Sept., 242,773 (211,522,369); Oct., 270,995 (240,105,888); Nov., 279,762 (238,951,681), and Dec., 340,108 (278,284,040). In express and express pound miles, Northwest announces "a new all-time high system record" for 1942. Its planes hauled 1,163,249 lbs. of express in that year compared with 709,710 in 1941. Express pound miles in 1942 totaled 856,605,160, against 416,048,017 a year earlier.

XUM

Cooperation

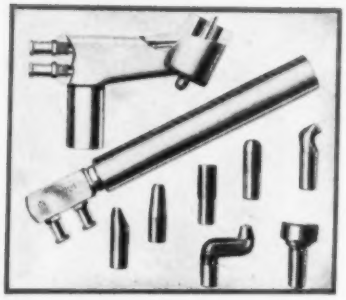
Successful modern warfare demands the utmost cooperation in effort from both fighting forces and civilians. The men and women of Breeze are doing their part — buying War Bonds and working day and night to turn out Breeze equipment for our battle units on land, sea, and in the air. Such products as Breeze Ignition Shielding, Flexible Conduit, Fittings and Multiple Electrical Connectors for communications systems on aircraft, ships and tanks, make possible dependable communication by radio, and help in no small measure to coordinate America's hard-hitting drive to ultimate Victory.

BREEZE

BREEZE CORPORATIONS, INC. • NEWARK, NEW JERSEY

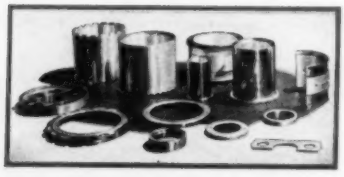
MALLORY PARTS are Precision Parts

Mallory services to the aviation industry have expanded their scope enormously. More and more aviation engineers are turning to Mallory while designs are still in the blueprint stage. They have learned that Mallory quality and Mallory experience insure dependable performance.

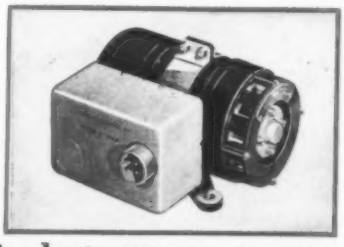


MALLORY Resistance Welding Electrodes and Holders: Mallory Standardized Spot Welding Tips and Holders, Mallory Seam Welding Wheels and Mallory Dies for flash or butt welding are speeding fabrication of aluminum, aluminum alloys, stainless steel and other metals in practically all leading aircraft plants. Mallory supplies specially developed electrodes that produce more welds between dressings . . . need replacement less often . . . and assure sound, clean welds at high production speeds . . . at lower cost. Write for the Mallory Resistance Welding Data Book.

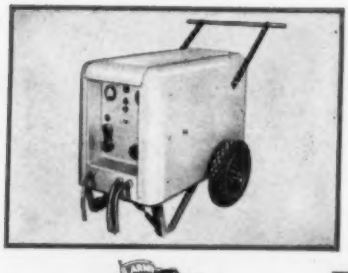
MALLORY Electrical Contacts and Contact Assemblies: Made of many different Mallory-developed alloys and pressed powder materials, these contacts and contact assemblies are used to actuate a modern airplane's electrically controlled apparatus . . . from retractable landing gear to variable pitch propeller. Mallory Contact Assemblies can save you production time when you need quantities of any given type of aircraft relay *fast!* The Mallory Contact Data Book is an invaluable aid—we will send it on your request.



MALLORY Bearings are made by Mallory's Mallosil* Process of bonding silver to base metal backings. They provide a tough, homogeneous, heat-dissipating silver surface of high fatigue resistance; ample strength and hardness; and high resistance to seizure. Mallory has set remarkable records for exactness and uniformity in producing bearings, bushings, pinion races, gear races and other aircraft engine parts.



MALLORY Noise Filters: Used in aircraft to suppress the static caused by spark-plugs, electric motors, inverters and other electrical equipment . . . and thus to assure clear communications.



MALLORY Approved Precision Products: This term also applies to the many kinds of electronic equipment and parts made by Mallory for the aircraft industry's use. For instance, Rectostarters* . . portable or stationary rectifier units . . . are used for testing aircraft electrical apparatus, for charging batteries in airplanes and in airplane plants, for starting "green" engines, etc. Also, condensers, volume controls, switches, vibrators, Vibrapacks* (vibrator power supplies), jacks, plugs and other electronic parts . . . made to high precision standards by Mallory . . . are used in aircraft and airport communications systems, in aircraft laboratories and plant control equipment.

*Reg. U. S. Pat. Off.

Our engineers are at your service.

P. R. MALLORY & CO., Inc.
INDIANAPOLIS • INDIANA

P. R. MALLORY & CO. Inc.
MALLORY Approved Precision Products

New Bill Would Give CAB Power To Insure Lines

House Interstate and Foreign Commerce Committee's chairman Clarence Lea proposes legislation which he says will reduce insurance rates for U. S. airlines and consequently their overhead costs.

Lea's bill (H. R. 1992) would authorize the Civil Aeronautics Board to provide insurance covering war risks, for citizen air carriers where such insurance cannot be obtained on "reasonable" terms from private companies or where advisable for military reasons.

The Board would be authorized to reinsure any U. S. insurance company on account of any air risk, whether or not arising from war.

The Board, which for some time has been studying the problem of airline insurance, is expected to report to Lea's committee shortly on the subject. Indications are that the CAB report will find that an unhealthy situation exists. At any rate, Lea plans to review the Board's findings and recommendations before pushing his legislation.

Proponents of the legislation say that airline insurance has been excessively high because of the high reinsurance rates charged by foreign firms. U. S. aviation insurance underwriters have been forced to secure reinsurance abroad because, as one spokesman puts it, "private U. S. firms are simply not big enough to offer reinsurance. . . . It must be obtained in England which has capitalized on large-scale insurance transactions."

Therefore, it is contended that the problem is whether airline reinsurance should be carried abroad or whether the U. S. government should step in and offer the reinsurance. If the government offered reasonable reinsurance rates, insurance firms in turn could insure airline companies for air risk at correspondingly lower rates.

One industry spokesman claims that British insurance firms have established high reinsurance rates for U. S. companies and much lower rates for their own firms, giving the British lines the advantage of considerably lower overhead costs.

Another objection raised to carrying aviation reinsurance abroad is that it amounts to flooding U. S. taxpayers' monies into British coffers. Airlines have been indirectly subsidized by taxpayers with airmail contracts, it is argued, and operating costs on those contracts are boosted by high insurance rates required of the lines.

Negotiations for reinsurance involves turning over voluminous data to the British. One leader in U. S. commercial aviation points out that this is significant because it affords the British a one-way flow of information on the status of our aviation business, plane designs, etc.

Lea indicates that the "threat" of the government entering the insurance field may be sufficient to effect reductions in air risk insurance.

Mexican Airline Receives $300,000 Loan from UAL

Most intriguing expansion possibilities in the air transport industry are currently centering about United Air Lines. In January *American Aviation Daily* revealed that United had made a loan of $300,000 to Lineas Aereas Mineras, S. A., commonly known as LAMSA, which operates a network of routes with a trunk line franchise between Mexico City and El Paso.

United confirmed the loan, but would make no other comment. No subsequent information has been made available. Meantime, industry circles are going on the assumption that a loan of that amount to an airline outside the United States could mean only an outright purchase of control, either now or later.

LAMSA has been operating for some years, but has had difficulty in meeting its schedules because of small equipment and financing. G. S. Barry is president and the Mexico City address is Avenida Cinco de Mayo 15. Charles Babb, well known international dealer in used aircraft, is understood to have held a substantial interest in the company for having furnished equipment, but Babb is reported to have said recently that he has now been paid in full, presumably through the United Air Lines loan.

According to last available information, LAMSA had a franchise for operating between Mexico City and Cd. Juarez (opposite El Paso) with stops at Chihuahua, Parral, Torreon and San Luis Potosi. Another route extended from Mexico City to Nuevo Laredo, opposite Laredo, Texas, with stops at San Luis Potosi and Monterrey. A third route ran east-west from Monterrey to Tayoltita with stops at Torreon, Durango and Mazatlan. Equipment consisted of Lockheed Vegas and some tri-motored planes. The company has operated for six years with a 100% safety record.

Biggest question mark, if United intends to take over and operate the route, is how it can be linked to the United Air Lines system in the U. S., if such is the company plan. For the border connections at El Paso and Laredo are far apart from the nearest United service. The Mexico City-Laredo franchise parallels to some extent American Airlines international service between Mexico City and Fort Worth. The through route from Mexico City to Los Angeles is operated by Cia Mexicana, subsidiary of Pan American Airways. Washington authorities profess to known nothing of United's activities in Mexico, or its plans.

25-Year Trans-Ocean Air Franchises Urged by Rick

A program of post-war planning to secure our aerial life line with the rest of the world by grants of 25-year reciprocal franchises for air service between the U. S. and other countries should be laid out now by the Treasury, State Department, CAB, Army and Navy, Capt. E. V. Rickenbacker stated in a recent Washington press conference.

In his opinion a dozen U. S. air transport companies could handle the world's traffic, if one company were given the route between the U. S. and England, another between the U. S. and Spain, another between the U. S. and Russia, etc. Granted reciprocal franchises at this time, airlines could map routes and formulate plans to keep aerial transportation systems flowing throughout the post-war world.

"In my opinion, air transportation has only scratched the surface . . . Domestically all transportation of passengers beyond 100 miles will be via air, all first class mail, all express and light freight will go via air," he said.

Asked if the hazards would first be removed from flying, Rickenbacker replied: "Based on miles per hour, there is no safer means of transportation in the world today." Improvements are being worked out that will make aviation so highly scientific that most of the human element will be removed, Rickenbacker said. In a few years instrument landings and take-offs will be safer than our present landings in fine weather.

He warned that the war could not be won before the fall of 1944 and stressed the immense amount of raw material wealth now owned by Germany and Japan following their conquests. We must destroy all enemy resources if we are to win and all energies must be aimed at that object—accomplishment of which can be only through air strength. "With all respect to the Army and Navy land forces, they are lost without a strong air force." He agreed with Gen. Douglas MacArthur that defeat of the Japanese must come by destruction of industrial centers, through heavy bombing raids, and not by piece-meal and plodding recapture of the islands of the Pacific.

Rickenbacker, who is chairman of the policy committee of the Victory Youth Corps, spoke on the work being done by the Corps throughout the high schools of the U. S. He estimated that 40% of all male youths graduating from high schools would serve in either the Army or Navy air forces as ground crew or flying personnel. He advocated more emphasis on war training programs and less on liberal arts in high schools to equip and train future soldiers for the job ahead of them.

CAB Investigates Clipper Accident

As this issue went to press, the Civil Aeronautics Board was starting its investigation to determine the cause of the Pan American Airways accident at Lisbon, Portugal on Feb. 22, in which 24 of the 39 passengers and crew members are either dead or missing.

Allen P. Bourdon, chief of CAB's accident investigation division, and Howard B. Railey, CAB technical consultant, flew to Lisbon to handle the investigation in cooperation with the Portugese government, CAB announced.

Press reports said the Boeing 314 Yankee Clipper exploded and sank as it approached its Lisbon landing base in a thunderstorm. The Yankee Clipper was the plane that inaugurated scheduled service between the U. S. and Europe on May 20, 1939. It had completed more than 200 over-ocean crossings.

This was the first accident on PAA's Atlantic route since its inauguration in 1939. A total of 1,225 flights had been made to and from Europe and more than 44,000 passengers and 2,500,000 lbs. of mail had been carried without accident.

In charge of the boat was Capt. R. O. D. Sullivan, veteran PAA pilot, who had just celebrated his 100th trans-Atlantic crossing, and who has also made over 50 trans-Pacific flights. Capt. Sullivan was rescued.

Dead or missing PAA crew members were: First Officer H. Stanton Rush, Third Officer Andrew R. Freeland, Flight Engineer Joseph F. Vaughn Jr., Steward Craig H. Robinson and Leonard A. Ingles, formerly a steward who was being checked out for the post of navigator.

The Clipper was en route to Foynes, Eire.

Tire Remover: W. H. Pitt, Salt Lake mechanic for United Air Lines, demonstrates a tire-removing tool which has become standard equipment along United's system as the outgrowth of a suggestion which he turned in to the company. He was awarded $130 in War Bonds by United's Suggestion Conference. The device, consisting of a steel frame and hydraulic jack, facilitates the removal of Mainliner tires without damage to either tire or wheel.

Today, while America's winged knights are fighting against barbarism on five continents, hundreds of men and women in National Airlines are serving faithfully at home providing fast passenger service in the vital Southern Area, carrying military freight cargoes, training military pilots and mechanics.

Tomorrow, when our men of the Air Services return, National will be ready to help them apply their hard-won knowledge, their high skills for mankind's betterment. Our post-war planning is devoted to the development of future opportunities for these men—opportunities of international scope in keeping with the sacrifices they are making.

Today

We are kindling
the torch—to light the
world-wide airways of the future.

Tomorrow

Thousands of men now in action will be working under the National house flag to help create a better world!

NATIONAL AIRLINES

The Buccaneer Route

Actions of the Civil Aeronautics Board

Order No. 2138, Jan. 29, 1943: Revoked private pilot certificate No. 28276, held by Richard C. Foster, for piloting aircraft while "under the influence of intoxicating liquor," and for other alleged infractions of the Civil Air Regulations, but stipulated that Foster may apply for a pilot certificate after Dec. 20, 1943.

Order No. 2139, Jan. 29, 1943: Reopened, for "the purpose of investigation," the case of Delbert Richardson, holder of commercial pilot certificate No. 48517.

Order No. 2142, Feb. 1, 1943: Suspended private pilot certificate No. 36073-40, held by Jack R. Blough, until Blough passes the requisite flight tests, because of his alleged poor performance while on a flight test on about Nov. 27, 1942.

Order No. 2147, Feb. 3, 1943: Temporarily exempted Arthur G. Woodley, doing business as Woodley Airways, from provisions of section 401(a) of the Act, insofar as such provisions would prevent this carrier from temporarily engaging in air transportation to and from Homer, Alaska, as a temporary terminal on its route between Anchorage and Ninilchik, Alaska, to extend for six months, provided the line files application requesting amendment of its certificate within that time.

Order No. 2148, Feb. 8, 1943: Approved an interline ticketing and baggage agreement between a group of domestic Canadian and Alaskan air lines.

Order No. 2149, Feb. 6, 1943: Directed that, as of Jan. 1, 1943, mail rate on TWA's routes 2, 36, 37, 38, 44 and 58 shall be .3 mill per pound mile.

Order No. 2150, Feb. 8, 1943: Exempted Compania Mexicana de Aviacion, S. A., from provisions of section 610 (a) of the Act, 1938, in connection with its charter service between Mexico City, Mexico, and Brownsville, Texas, to allow Pan American Airways to charter space on that run.

Order No. 2151, Feb. 12, 1943: Directed that Joe E. Miller, holder of commercial pilot certificate No. 1698 and an instrument rating, be permitted to apply within 90 days from date of order for an airline transport pilot rating, and waived requirements section 21.161(b) of the Civil Air Regulations.

Order No. 2152, Feb. 13, 1943: Approved cancelation of an agreement between United Air Lines and Western Air Lines, Inc., relating to furnishing of services at Lockheed Air Terminal, Burbank, Cal.

Order No. 2153, Feb. 13, 1943: Approved the holding by George W. Burpee of positions as executive vice president and director of American Export Airlines, Inc., and as secretary, director and controlling stockholder of Tennessee, Alabama and Georgia Railway Co.

Order No. 2156, Feb. 18, 1943: Authorized Eastern Air Lines, Inc., to suspend service temporarily at Baton Rogue, La., for the period between Dec. 15, 1942 and April 15, 1943.

Order No. 2157, Feb. 18, 1943: Amended, in Amendment No. 2, CAB Form 2780, Report of Financial and Operating Statistics for Domestic Air Carriers.

Order No. 2158, Feb. 18, 1943: Further amended, in Amendment No. 5, CAB Form 2780 Manual, Uniform System of Accounts for Domestic Air Carriers.

Order No. 2159, Feb. 20, 1943: Temporarily exempted Pan American Airways from provisions of section 401 of the Act, 1938, insofar as such provisions would otherwise prevent Pan American from temporarily engaging in air transportation to and from Maturin, Venezuela, instead of Caripito, Venezuela, as an intermediate point between Barcelona, Venezuela, and Port of Spain, Trinidad, on its operations between Cristobal, Canal Zone, and Port of Spain, with the provision that this authorization will terminate when the Board acts on Pan Am's application for authority to serve Maturin in lieu of Caripito, Venezuela.

Order No. 2160, Feb. 24, 1943: Directed that petitions for rehearing, reargument and reconsideration of Pan American Airways, regarding mail rates on its routes between San Francisco, Cal. and Auckland, New Zealand, and between San Francisco and Hong Kong, formerly operated by Pan American Airways Company (of Nevada), be granted for receiving additional evidence.

Order No. 2161, Feb. 24, 1943: Denied petition of Pennsylvania-Central Airlines requesting the Board to hold no further proceedings in the matter of applications for certificates of Eastern Air Lines, Inc., and Transcontinental and Western Air, Inc.

Order No. 2162, Feb. 24, 1943: Denied supplemental petition of Pennsylvania-Central Airlines that the Board hold no further proceedings on applications of United Air Lines for certificate to operate Toledo-Washington route, and of Transcontinental and Western Air, Inc., to operate Dayton-Washington route.

Order No. 2163, Feb. 27, 1943: Directed Northwest Airlines, Inc., to show cause why the Board should not make final the findings and conclusions which would set the mail rate at .3 mill per pound mile on its routes 3 and 45, effective March 1, 1943.

Order No. 2164, Feb. 27, 1943: In the case of American Airlines, Inc., Braniff Airways, Inc., Chicago and Southern Air Lines, Inc., Delta Air Corp., Eastern Air Lines, Inc., National Airlines, Inc., Northwest Airlines, Inc., Pennsylvania-Central Airlines, Transcontinental and Western Air, Inc., United Air Lines and Western Air Lines, Inc., Board directed these firms to show cause why their passenger fares, in view of "excessive" incomes during the five months ending Nov. 30, 1942, should not be reduced 10%, and further directed them to file answers to this order within 15 days from date.

Order No. 2166, Mar. 2, 1943: Permitted Pan American Airways, Inc., (formerly Pan American Airways Co. of Del.) to withdraw petition filed Sept. 23, 1941, and authorized that this petition be withheld from public disclosure.

Order No. 2169, Mar. 2, 1943: Approved revised contracts between Railway Express Agency, Inc., and All American Aviation, Inc., American Airlines, Inc., Chicago and Southern Air Lines, Inc., Colonial Airlines, Inc., Continental Air Lines, Inc., Delta Air Corp., Eastern Air Lines, Inc., National Airlines, Inc., Northwest Airlines, Inc., Pennsylvania-Central Airlines, United Air Lines and Western Air Lines, Inc.

Airline Commentary

CAB finally got around to simplifying its regulations covering the filing of new route applications . . . There was a time when, in order to file such an application, the poor bewildered applicant found it necessary to tell practically his whole life history . . . He also had to get out his crystal ball and tell the Board what his revenues and expenses were going to be on the new route for the next five years . . . This requirement was one of the biggest jokes in the industry . . . Now, however, one CAB official says that all you have to say in your application is "who you are and where you're going" . . .

●

For the past few issues we've been reporting the pros and the cons in the debate on whether the air mail is being unduly delayed . . . We finally asked Air Mail Superintendent Roy Martin if he had any figures . . . It seems that he had just made a check in New York on mail bound for the west coast . . . Picking at random Feb. 11 and 12 he found that on those two days 38 trips from the east reached Los Angeles, San Francisco, Portland or Seattle . . . These trips carried 50,412 lbs. of mail (1,512,360 letters, figuring 30 to a pound), an average of 1,327 lbs. per plane . . . The average delay in reaching the coast was only one hour and 27 minutes . . . Even the PO, however, admits that the situation isn't always this good . . . And the PO would like to see the airlines get more planes to do the job . . .

●

As pointed out in the last issue, TWA's gremlins sure made a hit . . . In case you didn't see the story, TWA has issued a booklet, with Gremlin illustrations, pointing out that these little devils are trying to plague airline employes, cause war nerves, etc. . . . TWA has had over 5,000 requests for copies . . . The booklet, we discover, was prepared by 33-year-old Eldon Frye (no relation to Jack Frye), who not only writes the copy but draws the pictures . . . He has prepared a second pamphlet, as good as the first, around the theme that the war is no alibi for being discourteous to passengers . . . Particularly good wording, we think, is the following: "Service is the only commodity we sell—a service of time and space—and we don't sell it by the pound or bushel. When a passenger leaves our plane he takes from us only his mental impression of TWA and its personnel. Let's look at TWA as a gigantic production line stretching 2,865 miles from coast to coast. All of us, no matter what our jobs, have our places on that line. The passenger who enters a station to board our plane is the raw material. When he leaves the station at his destination we should have produced a booster for TWA. If he goes away dissatisfied and complaining, we have produced a knocker, and somebody, somewhere on our production line, made him that way" . . .

●

Interesting facts and figures on air mail: the average haul of a domestic air mail letter in the fiscal year 1942 was 1,382 miles, while the average foreign air mail letter traveled 1,188 miles . . . A 465-mile trip was average for a first-class letter . . . A total of 463,234,654 pieces of domestic air mail was handled in 1942, but this was only 1.828% of total mail . . . Foreign air mail totaled 33,086,083 pieces, or .130% of all mail . . .

●

Reaction to CAB's demand that 11 of the domestic airlines reduce their passenger fares 10% was varied . . . An air transport lawyer, asked by us for a comment, said, "Well, we can't say we weren't warned" . . . An official of one of the smaller airlines not affected by the order said it would be an unhealthy situation to reduce the fares on some airlines and not on others . . . The public, not knowing the background, will accuse the unaffected airlines of charging exorbitant fares, he said . . . Our view has been that, rightly or wrongly, CAB was going to demand a reduction and that the airlines would have been wise to have beaten the Board to the punch . . . Had the airlines been given a little more time, we think it might have happened that way . . .

●

As noted elsewhere in this issue, the smaller airlines are protesting that they should not be placed on the same basis as the larger lines with regard to mail pay . . . It's anybody's guess whether they'll win . . . More than one CAB official, however, thinks they have a good argument . . .

E. B.

Northwest Airlines, Inc., reports total number of passengers and passenger miles during 1942 as 90,703 and 45,762,493, respectively. Figures for each month in that year, follow, with passengers first, then passenger miles in parentheses: Jan. 6,543 (3,212,362); Feb. 6,641(3,030,792); March 9,977(4,785,515); April 12,851(6,283,451); May 10,793(6,089,782); June 6,574(4,384,662); July 7,806(4,685,038); Aug. 8,007(5,068,145); Sept. 5,936(4,045,666); Oct. 6,142(4,177,080); Nov. 5,181(3,481,874), and Dec. 4,232(2,839,744). In 1941, Northwest hauled 153,708 passengers and revenue passenger miles totaled 77,233,662.

Airline Personnel

Bryan

Gould

Bell

Ray Grant

In The Services

Col. Leslie P. Arnold, formerly assistant to the president of Eastern Air Lines, is now commanding officer of the 39th Air Freight Wing, Air Service Commond, Patterson Field, O. **Capt. Wilson Brown,** formerly manager of air mail and express for Mid-Continent Airlines, is now assistant to Col. Arnold.

Prescott A. Tolman, coordinator of Eastern's military transport division, has been sworn in as a first lieutenant in the Marines.

Charles P. Knecht, Delta's city traffic manager for Dallas and Ft. Worth, has been commissioned as ensign in the Naval Reserve.

George E. Hatch, United's Chicago district traffic manager, has been given leave of absence to accept a commission as senior lieutenant in the Naval Reserve. He has reported to Dartmouth College for indoctrination training.

C. A. "Chuck" Wallace, National's Jacksonville district traffic manager, is undergoing Navy indoctrination at Dartmouth.

Traffic and Sales

Russell J. Smith has been named system manager of reservations by Western. **Rex Aber** succeeds Smith as Los Angeles manager of reservations.

Theodore P. Gould, former New England superintendent of reservations and ticket offices for American, has been appointed manager of reservations and ticket offices, with headquarters in New York.

W. C. Burks has been named Chicago & Southern's Chicago district traffic manager, succeeding **Byron T. Cline,** who has been made supervisor of traffic offices. **John G. Hughes** succeeds Burks at Houston as dtm, and **Anne Frances Beasley** takes over Hughes' former job at Jackson. **James W. Skinner,** former city traffic manager in St. Louis, has been named dtm at that city. **George Shedd,** in charge of reservations at Memphis, has been named traffic representative and transferred to St. Louis. **Kenneth J. Howe** is now C&S's city traffic manager at Little Rock, and is assisted by **Eve Newton. Bernardine Zorn,** manager of the company's Palmer House office in Chicago, has been made chief clerk-traffic and transferred to Memphis. She succeeds **Mrs. Fred Robertson,** who has been named supervisor of manuals.

Malcolm W. Stevenson has been named acting district traffic manager for United at Chicago, and **Ray Dunlap** is serving in a similar capacity at Denver.

B. G. Grant, formerly traffic representative in Atlanta for Delta, has been named city traffic manager for the company in Jackson, succeeding **Allen Birmingham,** who is now handling Dallas and Ft. Worth. **George Stayman,** who has been serving as traffic representative in Cincinnati, has been formally named city traffic manager for that city.

Wilson

Schroeder

Tolman

Pack

Stevenson

Mangold

Smith

Hatch

Gordon R. Wilson, Trans-Canada's city traffic manager at Winnipeg, has been promoted to district traffic manager, Montreal, succeeding **F. P. Alward,** who has been transferred to Winnipeg as chief clerk in the general traffic office.

Miss Lucille Schroeder has been named chief stewardess for United's eastern division.

Operations

Ray Grant, Los Angeles traffic executive, has been placed in charge of Western's air mail, express and cargo research and traffic.

Three new area managers in United's air cargo department are: **Robley L. Mangold,** area manager for Oregon and Idaho, with headquarter at Portland; **Robert E. Caskey,** formerly with Connecticut General Life Insurance Co., temporarily assigned to Chicago; **Robert M. Ruddick,** formerly of the Milwaukee Journal, also temporarily assigned to Chicago.

Thomas D. Brooks has been named general superintendent of Chicago & Southern's modification center at Memphis; **John Charter,** chief inspector; **Robert Davalos,** general foreman; **Charles A. Johnson,** experimental general foreman.

W. G. Crockett has been named C&S's superintendent of building maintenance, and **W. K. Crouse** is safety engineer at Memphis. **Herbert W. Davis** is personnel technician and will have charge of all matters pertaining to selective service.

TWA announces the following appointments: **Lee Flanagin,** named assistant operations manager in charge of contract air cargo; **H. B. Andrews,** named superintendent of the western division, and **C. T. Weaver,** named supervisor of central flight control.

Miscellaneous

J. Raymond Bell, former advertising and publicity director for Loew Theaters in Washington, has been appointed director of advertising and public relations by Pennsylvania-Central.

MacDonald Bryan, Jacksonville newspaperman, is National's new director of public information.

J. L. Maloney is the new assistant to Pan American's director of public relations. **Marshall F. Bannell** has replaced **Bill Flower** in Washington public relations, the latter having transferred to the New Orleans office.

Charles A. Stevens, Jr., has been named manager of American's advertising department. He has been with the company's advertising department since 1937.

Raymond E. Peterson, formerly United's Milwaukee district traffic manager, has been named assistant to **R. F. Ahrens,** company's personnel director.

Harry Pack, industrial designer and engineer, has been named chief of air cargo development by Pennsylvania-Central.

R. O. Bullwinkel, formerly traffic manager of Pan American's Alaskan division, has joined Northwest as assistant to the president, western region.

Kenneth Crago, former Chicago superintendent of air mail, express and freight for American, has been named southern superintendent of mail, express and freight.

Henry F. Hansen, formerly a United station attendant at San Diego, is now assistant area manager of United's air cargo department at Los Angeles.

Planned during Peace

...Proved by War

SIX YEARS AGO — when the world was at peace — American Export Lines and American Export Airlines launched new programs of expansion — for greater world commerce and stronger national defense.

To attain this objective, American Export Lines designed and built large, modern, fast freighters. The then newly established American Export Airlines announced the first nonstop transatlantic air service, began developing its organization, and ordered large, long-range transport planes.

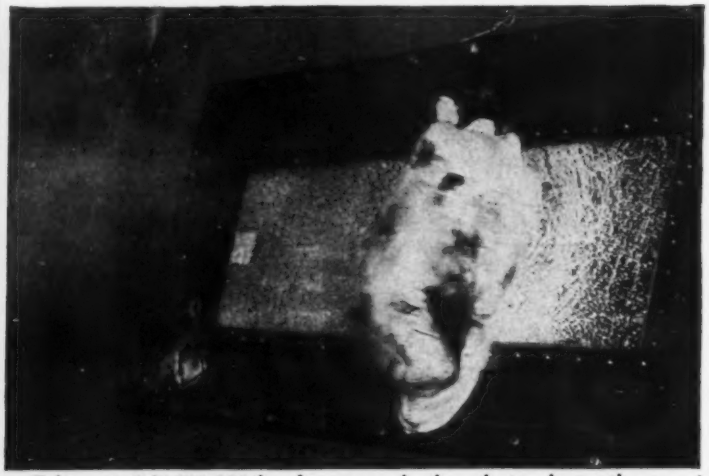
Today — transportation holds the key to victory in this global war. Fighting men and materials are speeding to distant fronts — lengthening supply lines are being kept open. Transportation, planned during peace — has gone to war.

American Export Lines, which for twenty years, prior to this global war, had regularly served North Africa, Mediterranean and European ports, now is operating its great fleet of fast cargo ships — entirely in the war effort — wherever duty calls.

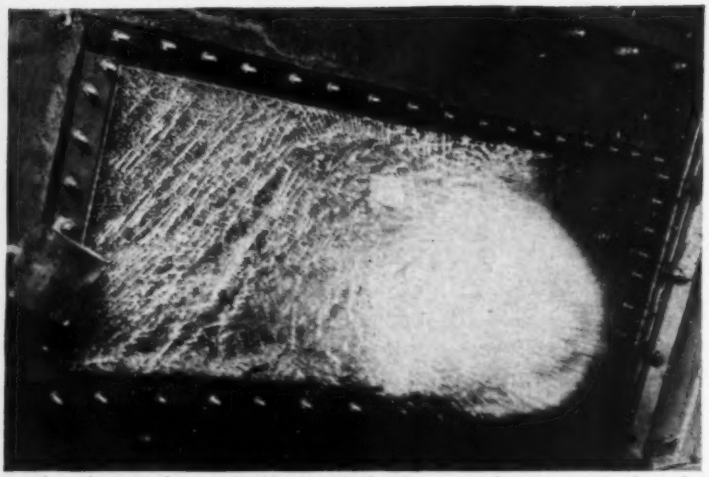
American Export Airlines, with its fleet of long-range giant aircraft, is maintaining regular service over the North and South Atlantic — entirely in the war effort — wherever duty calls.

American Export LINES AIRLINES

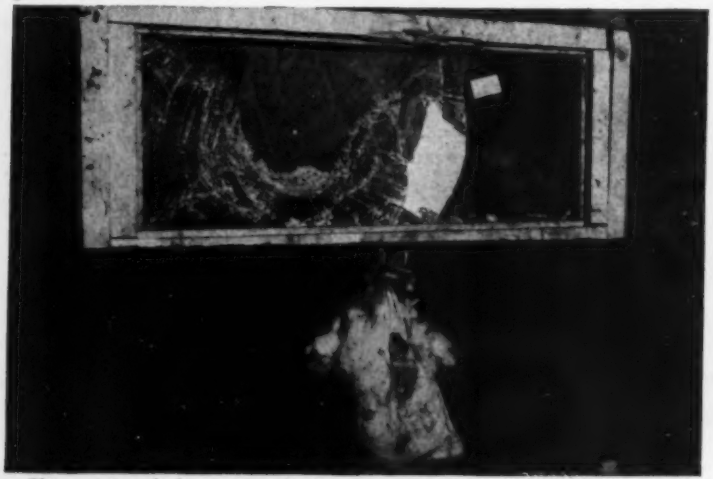
25 BROADWAY, NEW YORK



Taken at 2/1,000,000th of a second, the photo shows the exact moment at which the bird carcass struck the windshield. CAA is continuing its tests, wants to develop a windshield that will stop a 15-lb. bird at 250 mph. Successful 'stops' have already been made at speeds of over 200 mph.



This photo, taken at 35/1,000,000th of a second, was snapped at the rear of the panel as the carcass struck. Note that the plastic "gives." To protect the pilots from flying glass, a scratch-resisting plastic will be used on the cockpit side of the windshield. This installation had not yet been made when the above picture was taken, and flying glass can be seen.



This gaping hole was made in a present-day windshield by a 4 lb. chicken going 100 mph. Shown below is the chicken after its 'flight' through the one-fourth inch safety glass.

CAA Makes Progress With 'Bird-Proof' Windshields

Pilots who have been "getting the bird"—through the windshield—can rest easier. The Civil Aeronautics Administration, in cooperation with a group of commercial companies and the airlines, has developed an airplane windshield that will stop 15-lb. bird carcasses traveling at speeds in excess of 200 mph.

At the same time, steps have been taken to solve the windshield icing problem. The ultimate "bird-proof" windshield, CAA officials say, will contain a narrow air space through which hot air will be circulated, keeping the glass de-iced.

That pilots have had their troubles with birds is attested to by A. L. Morse, chief of CAA's aircraft section.

"Even small birds such as ducks not only have penetrated the windshield, but one in particular continued through the bulkhead, traveled the length of the cabin, penetrated the rear cabin wall, and lodged finally in the baggage compartment," he said. "Fortunately, in this case neither the passengers nor the crew were struck."

One pilot reported as follows: "Time, 12:17 A.M. Climbing at 8,000 ft. Air speed, 150 mph. Hit flock of swans. One swan penetrated leading edge, left wing. Second swan almost tore off left vertical stabilizer. Rudders jammed. Third swan struck and dented engine cowl. Later, two swans went through propeller. Portion of swan taken from wing after landing weighed 11½ lbs."

Airlines Cooperate

The Air Transport Association still reports to CAA every time a pilot has bird trouble.

Confronted with the necessity of solving the bird problem, CAA decided to develop a method of throwing birds against windshields for test purposes. It contracted with Westinghouse Electric and Manufacturing Co., Pittsburgh, to devise a gun out of which birds could be shot. The company came through with a $2,500 "weapon" fitting the purpose.

Sample windshield panels were contributed without cost by Pittsburgh Plate Glass Co., Libbey-Owens Ford, E. I. du Pont de Nemours and Monsanto.

In tests conducted at Pittsburgh recently, "tough old birds" were used, according to Morse. They were painlessly electrouted with a 5,000 volt charge, placed in flour sacks, stuffed into the gun barrel and shot against the windshields at speeds simulating actual flight conditions.

One promising type of panel, CAA says, is made by laminating a sheet of especially prepared polyvinyl acetal resin one-half inch thick between two panes of semi-tempered glass, each one-eighth inch thick. The amount of plasticiser used is adjusted to provide a maximum of toughness and "give" at the temperature maintained during flight.

Plastic Used

The half-inch plastic sheet extends about an inch beyond the glass and is bolted to the reinforced metal framework of the airplane. Sheet metal strips are imbedded in the extended edges to insure against the windshield tearing loose from the supporting structure. The hazard of flying glass is eliminated by substitution of a scratch-resisting plastic for the rear glass plate.

The windshield assembly includes a front pane of one-fourth inch tempered glass, separated from the impact resistant panel by a narrow air space through which hot air can be circulated. This, it is said, prevents the accretion of frost and ice and maintains the high temperatures necessary to provide a maximum of impact resistance in the panels.

Although some windshields tested will stop a 15 lb carcass at over 200 mph, CAA is not satisfied. It wants to reach at least 250 mph.

CAA is making the results of its tests available to the industry. Several airlines have been working on the windshield problem for some time, and have cooperated with CAA.

The Westinghouse 'Bird Gun'

This super air gun used in the tests has an 8-inch bore and a 20-ft. barrel.

Corsair **TAKEOFF**

With a thundering roar the Navy's Corsair fairly leaps off the carrier. Two thousand horsepower is the reason—plus twenty-six years of experience in designing first-line warplanes for America's fighting forces.

CHANCE VOUGHT AIRCRAFT STRATFORD CONNECTICUT

ONE OF THE FOUR DIVISIONS OF THE UNITED AIRCRAFT CORPORATION

Total Maintenance by Mfrs. Proposed

Reader Predicts Aircraft Manufacturer Will be Overhaul Agent and Service Coordinator

By E. J. FOLEY

A READER has proposed that the aircraft manufacturers should assume the full and administrative responsibility for the maintenance of their airliners in the post-war air-transport-age. Being a possible extension of the principles outlined in our article of January 15th, the idea may have a general appeal, so we shall attempt an analysis of its aspects.

While the reader did not specifically indicate, we feel sure that the aircraft manufacturer would service only the components *he* had made. The other items—instruments and engines — would be handled by their respective manufacturers' agencies, and the overall picture would be coordinated by the aircraft manufacturer. He would be the official contractor for the entire job.

Foley

Interjecting a thought from the airline mechanic's side of the fence, we were soundly censured by some of these men for our recent manufacturer-maintenance suggestions. They accused us of talking their jobs right from under them. We never imagined that they would so react to the idea. From some of the comments we'd heard regarding the advantages of manufacturers' pay over airline rates, we thought they would jump at the chance for a change. In any event, we are sure that no plan, regardless of the change it may necessitate in the maintenance structure of the industry, can cost a single job. We're a long way from even technological unemployment in the air transport field.

Justify Investment

Returning to our theme, the inclusion of the manufacturer as an "overhaul agency" is hardly a new thought. Yet it takes on a new light when we consider the expanded functions of air transport as contemplated for the future. If we assume thousands of transports in operation, then we may be able to justify the capital investment required of the aircraft manufacturer and his associates to establish one or more of these gigantic overhaul bases at strategic locations throughout the nation.

Quantity is the keystone, perhaps. But unless considerable standardization of airline equipment to two or three specific airplanes is practical, the ratio of aircraft quantity to aircraft type may be very low. The net result of this would tend to cloud the practicability of manufacturing maintenance on the proposed scale.

The attainment of this standardization is a problem of airline agreement on just what they want and manufacturer cooperation in filling the bill. These two follow in that order of importance and neither is as simple as it may sound. We are opposed to standardization simply from a desire to have everything alike not necessarily the best. Likewise, we abhor standardization which freezes initiative and flexibility and dooms progress. We doubt that either of these elements need taint the standardization required for such a maintenance plan. We mention them rather as pitfalls to be avoided.

Assuming large, sensibly standardized fleets, we have our basis for, as examples, a large Lockheed overhaul base in Omaha or a Douglas "service station" in Chicago, etc.

Such a project offers two possible techniques for operation. We can visualize the outfit as a periodic overhaul base or teardown shop. This angle presumes, of course, that the airlines retain a considerable portion of their present facilities to provide for inter-overhaul maintenance On the other hand, it is possible that a production-line continuous maintenance procedure could be adopted to handle *all* maintenance.

Of the former, we feel that the synchronization of aircraft engine, instrument, accessory, etc., teardown overhauls necessary to assure the flow in such an enterprise would present a formidable problem. This combined with the basically higher cost of teardown overhaul in materials and labor and the remaining maintenance burden upon the airlines we feel casts some doubt as to the practicability of such a setup.

On the other hand, the continuous maintenance applied by manufacturers and involving the entire aircraft proper presents problems. The frequent routing of airline craft to the base under such a practice could easily be a major problem in schedule keeping and similar factors of air transport operation. Certain parts of this problem can be solved through our often specified functional maintenance design on the part of the manufacturers. This would be a splendid victory and we think it, if achieved, would alone justify the serious study and application of such a technique. We shall have to stretch the allowable periods between the several types of aircraft service.

Under such a program it might be possible to eliminate all servicing from the airline operation except for predeparture and post arrival touchup. From any angle, such a goal is a long ways away—if at all desirable. It would leave the airline just an operating entity.

Either technique of this manufacturer maintenance poses many problems that are soluable only by a new attitude on the part of the airlines Further, either technique offers certain specific advantages to the manufacturer over and above the economic advantages in the post war period.

First of all, the airlines would not only have to move toward "identical" standardization of aircraft. They would find it necessary to agree upon all maintenance procedures-general, if we speak of teardown overhaul, or detailed service items if we speak of continuous maintenance. This is indeed a difficult problem. There has been a strenuous divergence of opinion upon maintenance requirements between the several airlines. Regardless of what we feel these differences to be attributable to—professional jealousies or individualism prompted by the pressure of work, they would not be tenable under such a service organization structure.

A second problem would be that of interchange of equipment. Maintenance standardization, as prescribed by the "joint airline committee," should assure acceptance by all airlines of all aircraft. The economies of such an arrangement, practically applied, would prompt the use of just such interchangeable nameplates as presently employed by the airline limousine services in metropolitan areas.

Spare or standby aircraft requirements would presumably vary between periodic overhaul and continuous maintenance. In either system, the owner of the aircraft might be the manufacturer himself (as an element of the service) or the cooperating airlines as an equipment pool. These aircraft would, of course, be allocated to the airlines in direct proportion and identical quantity to those being serviced. Spare engines, control surfaces and stocks all the way down the line to supplies would have to be similarly handled from a charge standpoint. The second thought upon this point prompts us to mention the possible intricacies of apportioning charges for material and labor expended upon such a pool of aircraft. Unless aircraft of individual airlines are segregated throughout the service period, there would need to be an agreed-to prearrangement for dividing charges. The difficulties involved in this single point indicate to us how detailed must be our consideration of such a proposal.

Welding Aid: A new product of the Lincoln Electric Co., Cleveland, Ohio, is this "Lincontrol" arc welding accessory. The unit, said to be almost as light as a shoe, is strapped to the welder's foot, thus permitting him to move about freely. In operating the control, the welder by exerting foot pressure increases current. With this full control, the operator is free to adjust the arc without changing his position to make adjustments on the machine due to minor thickness or fit-up changes.

Desirable Goal

We mentioned earlier that the manufacturers stand to gain from any such organization. This is readily understood when we realize how closely the arrangement will bring the designer to the scene of operation. This is a most desirable goal; one which must be attained by any means whether this or another. If a manufacturer ever contemplates such a maintenance establishment, we recommend enthusiastically that he staff the organization on a rotating basis with many of the design engineers of his staff in observer capacities. Function must be the most familiar word and concept in the mind of the designer.

The airlines, we feel, will be reluctant today to adopt entirely such a plan for the future. The importance of maintenance as an air transport operating factor is indelibly impressed upon every airline staff. The confidence which they repose in this part of their work carries over and bolsters flight crew morale. Whether the same effect could be expected by contracting for this work with an outside agency—familiar with manufacture but unversed in operation, is doubtful to our way of thinking.

We stress the *present* in our comments upon the dubious value of this program. We do so because we can visualize it as a potential asset if sufficient interest and development of the subject matter can come from the manufacturers. If they want to participate in such an enterprise, they must take the ball and run with it. Until their scoring record indicates their awareness of the role for which they've applied, support for the idea may be lacking.

Once they evidence cooperation in achieving a transport vehicle built to be maintained with ease and speed, their readiness may bring them business of this type. Then, if airline agreement, method of aircraft allocation, division of material and labor charges and similar details of the mechanics of this program can be satisfactorily compromised, we shall have the makings of a new link in the aircraft industry.

Wedge-Lock Wrench

A new type of socket wrench, called the Wedge-Lock, is now on the market after a year of testing and refinement. Made by the F & H Mfg. Co., 2207 W. Jefferson St., Los Angeles, this wrench has no ratchet to limit movement, wear or break.

Two hardened steel, free-moving shoes serve as an instantaneous act-

ing clutch. At the point where the handle comes to rest on the back swing, the wrench is immovably locked for the tightening pull. It is claimed that there is no play or friction inside the wrench and that operation is unaffected by oil or dirt. Since handle movements of 1/16" or less are 100% effective, Wedge-Lock is called "The Million Position Wrench" and should be especially useful in close-quarter work. Design and material are said to give the wrench extra strength and immunity to rough treatment. The tool is available in four sizes: ¼", ⅜", ½", and ¾".

Equipment Literature

Aluminum Company of America, Pittsburgh, has issued a completely rewritten, 1942 edition of their 100-page booklet, "Welding and Brazing Alcoa Aluminum." The inclusion of information relative to brazing is one of the features of the new edition. Profusely illustrated, the book presents detailed instruction-information as well as technical data.

•

For the convenience of engineering, production and purchasing departments the Weatherhead Company, Cleveland, Ohio has published a wall chart illustrating fittings, hose, valves and other accessories of their manufacture. The chart provides a complete catalogue and identification system for the parts. It is 17" by 22", printed in three colors on heavy coated stock.

•

A revised 82-page Bulletin covering AN Electrical Connectors has recently been published by the Cannon Electrical Development Co., 3209 Humbolt St., Los Angeles. Well illustrated, the publication covers general information on the AN connectors and also treats Junction Shells, AN Cable Clamps, Dummy or Stowage Receptacles, Dust Caps and Cannon Bonding Ring. Department G of the firm can supply copies.

•

Bulletin No. 790, describing the Model J single-range hand tachometers is the most recent publication of the Herman H. Sticht Co., Inc., 27 Park Place, New York. The tachs covered are of the centrifugal mechanical type and indicate speed or speed changes continuously and instantly. Primarily designed for heavy duty service and equipped with 4" white on black dial, the instruments are available in six speed ranges from 100 to 10,000 RPM.

•

Gothard Manufacturing Co., 1300 N. Ninth St., Springfield, Ill., presents an 8-page illustrated brochure covering their line of jewel pilot lights for aircraft, marine and industrial applications. Installation-dimension diagrams are included for many of the units.

•

Under the direction of Mr. Lyle R. Hackney, Weight Control Staff Engineer of Lockheed, the Society of Aeronautical Weight Engineers has published Volume II of the Weight Handbook. The function of this volume is the presentation in concise, tabulated, unified form of weight and engineering data of all purchased equipment and aircraft accessory items in current use. It is conceded by the editors that much of the information contained in the volume has appeared or does appear in other scattered sources but, it is said that this is the first comprehensive compilation. Over 300 companies were contacted for the data which go to make up the text and sample subjects treated are: landing gear equipment, vacuum system, starting system, electrical system, lubricating system, instruments, hydraulic systems, communications, furnishings. In order that revisions and corrections may be readily made as the manufacturers change their designs, the handbook is set up in loose leaf form. The Society will forward these changes to all handbook holders. The book certainly appears to fill a need of all aeronautical engineers, manufacturing and transport alike, whether involved in weight work or not.

Small Rotary Table Produced by Duro

A new small 6" rotary table for application in usually inaccessible places is now being produced by Duro Manufacturing Co., 800 E. 61st St., Los Angeles. A worm gear ratio of 60 to 1 in this unit gives fast rotation—six degrees for one crank turn; back lash has been

eliminated by the use of an eccentric adjustment between worm and gear.

Graduated to tenths of a degree and clearly cut, the bevel dial should permit easy reading. Two "T" slots at 90 degrees form the four quadrants and a "T" lock screw is provided for fixing the table position. The unit is semi-steel, seasoned and the construction is heavy. The table is 2⅛" high and the weight is 14½ pounds.

Labor Board's West Coast Decision Criticized by Unions and Industry

By Conrad Campbell

THE West Coast Aircraft Industry on Mar. 3 finally received its so-called wage stabilization program from the National War Labor Board. After months of procrastination and many false starts, the Board brought forth a decision that satisfied no one and, in the opinion of both management and labor, opened up a whole series of new problems which may precipitate further trouble at any time.

With five members objecting, the Board denied a general wage increase to 250,000 West Coast aircraft workers and set up a new job classification system which gave some of the workers varying increases averaging 4½c to 7½c an hour. Bonuses of $64.75 for California workers and $78.75 for Boeing employes were granted as a "retroactive wage adjustment."

Four of the labor members called the decision a "mathematical fantasy" and a "piece of legerdemain which has no relation to any demonstrable facts." Dean Wayne Morse, public member, called it "stabilization bungling." Much of the dissenting opinion was directed against participation in the final outcome by Office of Economic Stabilization Director Byrnes.

Management, which had previously agreed to numerous demands of the labor group, particularly in its willingness to meet or even increase many of the wage increases asked, occupies the usual position of the innocent bystander. A slip in workers' morale, immediately evident, put a strain on production plans and has added to administration costs. Whether this proves to be a temporary manifestation which may die down, or marks the beginning of new strife, remains to be seen.

In the meantime, company executives indicated that they would comply with the ruling. Most of them stood back of Donald Douglas who said: "It is apparent from press dispatches that real progress has been made in stabilizing wage rates and working conditions in all airplane plants in this region, that all aircraft workers in all factories here will receive the same pay for the same work, that all workers will benefit in accordance with their skill, that all workers will have an equal opportunity for advancement, and that all employes, old and new, will receive retroactive bonuses and other benefits."

Bonus Paid

Steps designed to take advantage of opportunities presented by the decision have already been taken. The retroactive bonus will be met promptly and ready cash in workers' pockets may stem some of the dissatisfaction. In addition, it is expected that management will interpret the upgrading clauses liberally. Good workers will be given classifications to which they are entitled, even though it may mean an extra grade step. This, it is hoped, will serve to keep good workers happy and either weed out poor ones or stimulate them to improve their output.

Production losses have been predicted by representatives of American Federation of Labor aeronautical mechanics lodges who met in closed session. Workers, the statement of the labor groups said, would leave the aircraft industry to seek higher wages elsewhere. "The directive of the War Labor Board does not solve the conditions that have caused a serious labor migration to better paying jobs in other war industries," they stated.

However, CIO leaders declared: "The important thing about the Board's plan was that it provides for a review of classifications for about 225,000 workers and until that review is completed the exact meaning in dollars and cents cannot be established."

Under WMC Program

In the meantime, Washington observers point out that the whole West Coast area is functioning under a labor stabilization program of the War Manpower Commission. Workers are not able to leave one war industry for another without an explanation that will satisfy local United States Employment Service officials. Hence the threat of wholesale migration would seem to be overdrawn, although slowdowns by dissatisfied workers could effect real damage.

By the decision, a general wage increase was ruled out. However, certain classifications at Boeing were awarded an increase of 4.5c an hour. To this was added a time equity bonus of $78.75 in cash or four war bonds having a face value of $100, plus $5.75 in cash. At the same time half of the workers in the California plants were given an increase of 7c an hour, and a cash bonus of $64.75, or three war bonds totaling $75, plus $10 in cash.

Indicating that the bonus grants were sops to quell disappointment rather than money actually due, the Bureau of Internal Revenue has ruled that the 5% Victory tax is payable on these amounts, thus establishing that the money was not earned prior to January 1, 1943.

The decision has brought the National War Labor Board to a climactic period in its existence. Much of the dissent by the labor members of the Board, and by Dean Morse, public member, was caused by the active and dominant position taken by OES Director James Byrnes. It is understood in Washington that the original decision of the Board followed rather closely the more liberal recommendations of Paul R. Porter, but were severely cut when Byrnes' office insisted upon maintenance of the "Little Steel" formula; inasmuch, as the Office of Economic Stabilization would seem to have the final word in the matter, the labor members felt that the Board can not continue to have the confidence of labor if it does not preserve some measure of independence.

'Questionable'

In ending their statement of dissent, the labor members declared that the public members who had consulted with Byrnes (Dean Morse was not among them) before deciding the case, had indulged in "a highly questionable practice" since the Board was supposed to be, by Presidential directive, an independent agency.

The decision has also been attacked for confining wage rates to those between aircraft and general manufacturing. It was reported that aircraft wages in Southern California averaged 89c an hour while shipbuilders in the section received $1.33.

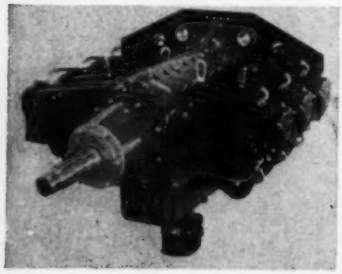
In explaining why the Board majority held that the California employes were not entitled to general increase under the "Little Steel" formula, Chairman David said: "That there has been, in fact, an overall increase in average straight-time hourly earnings of at least that amount is quite solidly confirmed by the fact that average straight time hourly earnings as of September, 1942, are 27% above average straight-time hourly earnings for January, 1941."

However, the opinion of the nation's press is that the decision leads away from stabilization rather than toward it, and is definitely inflationary. In any event, the whole proceeding seems to have met with the approval of no interested faction. Management finds its labor picture unsettled with signs of continued disaffection; labor, its hopes raised unduly through optimistic statements of labor organizers, is bewildered, feels let-down and antagonistic; government has shown itself inadequate to handle the situation and is placed in an unfavorable position for later disputes, such as the pending United Miners' demands for a $2 a day increase.

East Coast Wonders

East Coast aircraft manufacturers wonder how the decision will affect them. It is understood that a committee from the East Coast and Mid-West companies has been formulating a new job classification schedule. If it met with the approval of labor when completed, the plan had been then to take it to the National War Labor Board for final opinion. Whether, under present circumstances, this program will be sufficient to avoid labor unrest in these sections poses a new problem.

NWLB mediation panels have suggested that the East Coast Industry present its case to the Board for decision upon a wage stabilization program. Indications now are that this plan may be held back until definite need arises, rather than edge into another "stabilization bungle" as NWLB member Dean Morse, has characterized it.



New Pancake: First photo of Lycoming's new flat, geared engine, a six-cylinder, horizontally opposed model of 210 hp. with propeller reduction gearing in a self contained unit.

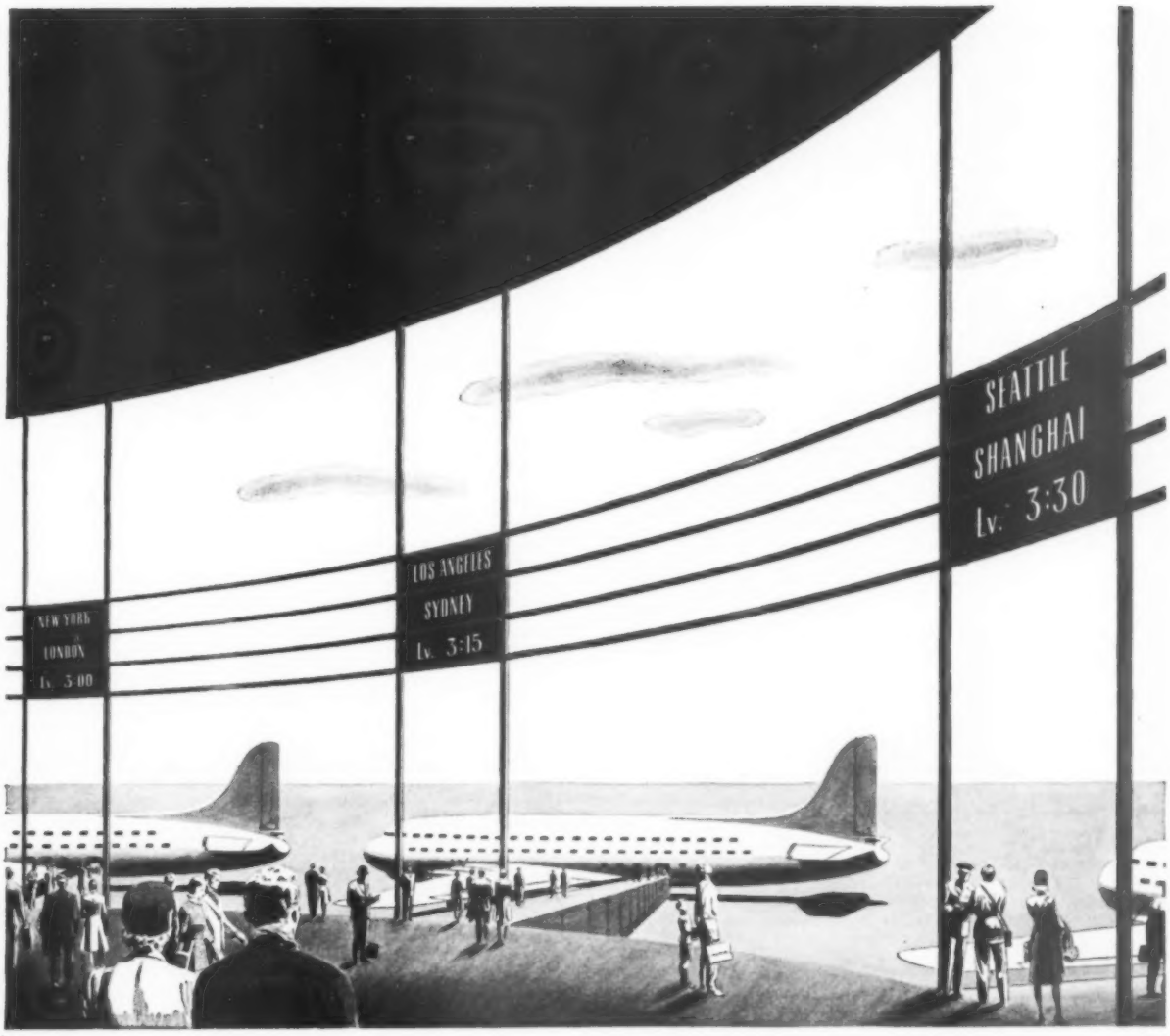
New Prop Tested: Said to be the first American-built dual-rotation constant speed propeller to fly, Hamilton Standard's new prop is shown on a medium bomber shortly before take-off. It consists of two three-bladed propellers, mounted co-axially on one shaft, one rotating clockwise and the other counter clockwise.

Completely Automatic Flying Near—Breech

"Developments to date make it possible for me safely to say that we can see the time of automatic flying coming within the next few years," predicted E. R. Breech, president, Bendix Aviation Corp., Detroit, Mich., at recent annual stockholders meeting.

Bendix's staff of engineers has undertaken the task of making this possible, according to Breech; and will attempt to develop and perfect instruments and controls that will enable practically everyone to fly safely, within just a few years.

XUM



Trade Routes in the *Age of Flight*

The airlines are doing two jobs today: For example, United Mainliners are operating regular scheduled flights over the Main Line Airway for passengers, mail and express; other United planes are operating military routes to foreign lands. Both of these vital war duties are helping them to prepare for new responsibilities . . . in the coming Age of Flight.

Many of the earth's resources lie isolated . . . untouched . . . awaiting an economical way to reach them.

In the Age of Flight, the airplane will unlock these resources. For the airplane is a pioneer. It can chart the courses of trade routes to different lands. Railroads or highways may then be built . . . towns born to flourish . . . and the development of a new trade route completed.

Recently, a remote outpost on this continent was threatened. Great transport planes went into action. Guns, munitions, soldiers, workmen, machinery were flown across miles of wastelands. A powerful air link was established.

Meanwhile, a highway was started. Plans for a railroad were drawn up. Some day, buses, trucks, trains and planes will all share with the already established steamship lines a profitable trade to that land of opportunity.

When the war is won, this same experience will be duplicated in other places throughout the world. United Mainliners of the future will take to the skies on errands of peace—trail blazers of new and profitable trade routes—heralds of the Age of Flight.

★ BUY WAR BONDS FOR VICTORY ★

UNITED AIR LINES

THE MAIN LINE AIRWAY

Minneapolis-Honeywell Nets $2,868,008; Aero Division Progresses

"Production results from these (aviation) facilities will show for the first time during 1943," Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., asserts in disclosing net income for the year ended Dec. 31, 1942 as $2,868,008.09, equal to $3.46 per share, common, before post-war refund, on sales of $41,372,912.26.

Net income in 1941, after setting aside a special contingency reserve of $500,000, was $2,737,295.49, or $4.20 a share, common, on sales of $24,257,811.38.

"The nature of these developments (in its aero division) is secret," company explained, "but it can be stated that one of the aero division's outstanding products is standard equipment on America's heavy bombers . . .

"To meet the demand created by the rapid progress of the aero division, unusual steps have had to be taken by the company. Large scale facilities provided by the government have been readied for production, personnel hired and trained, and new manufacturing methods developed."

Because of the need for service and maintenance of equipment, "now installed in planes in action on many battlefronts, the company has provided specially trained men to serve with the fighting forces in the Pacific, Africa, England, India and elsewhere," company commented.

Balance sheet as of Dec. 31, 1942 shows total assets of $36,841,585.47, and current assets of $31,028,325.62, including cash, $7,430,754.71. Current liabilities are $20,231,096.80, including accounts payable, $1,809,738.30. Charged against income was provision of $13,559,624.69 for Federal income and excess profits taxes and renegotiation of United States Government contracts.

At the end of 1942, company had used $6,000,000 of its $15,000,000 V loan credit, which runs to Dec. 31, 1945.

Ford Claims Shortcuts In Glider Manufacture

First official announcement of Ford Motor Co. on its glider program, issued March 7, reports training and combat glider production now "well under way" with several time-saving innovations and the use of automotive mass assembly principles in the plant at Iron Mountain, Mich.

Time saving claims made include development of a gluing process cutting an operation of six or eight hours to less than 10 minutes.

Conversion of the Iron Mountain plant was accomplished in six months, the Ford statement said. Various phases of assembling the broad-winged, 15 place Waco craft are assigned to groups of independent units in three buildings. Completed products move to a main assembly line.

"The assembly system spreads through the buildings like fingers of an open hand," Ford officials said. "The thumb is Building One, where the steel fuselage skeletal structure is equipped with fairing, fabric is doped and painted, and the gliders finally assembled. Three fingers represent Building Three where inboard wings, floors, fairing, dorsal fins, ailerons, skins, rudders and fins, doors, door frames, elevator and stabilizers are made and assembled. The smallest finger hooks into Building Two where shipping crates are made."

The new gluing system utilizes waste steam piped through flat rubber tubes, set into fixtures and contacting glue joints of the parts being assembled. Linked to the heating system, the rubber veins swell and dry the glue through the application of heat and pressure.

Used mainly in fitting plywood skin to the wings, this system also is claimed to be employed successfully in gluing ribs, stringers, bulkheads, stiffeners and other structural parts.

In another drying process, it is combined with electric jigs to quick-dry glider parts in the fixtures. Shoe-like electric clamps grip glue joints at the exact spots to be dried, while the rubber tubing contacts those areas where plywood skin has been added.

In the fairing rooms prefabricated steel skeletons are inspected before floors, spruce and mahogany plywood crossmembers, skids, door frames, hardware fittings and other parts are attached. The craft then move into the dope room where fabric is treated and camouflaged, protective coats being sprayed on virtually every part of the glider.

In the final assembly room the 20 major glider parts are joined together—three sections of the fuselage; seven empennage parts; four wing sections, two ailerons; two V struts, and two landing gears, one for training, the other for combat. During assembling pilot equipment is installed in the cockpit and plexiglas is fitted into the nose.

After government inspection, the glider is dismantled, fitted into crates, and shipped by truck to the Ford Dearborn airframe building where it is reassembled, manned by Army pilots, and towed by plane to Army airfields.

To launch the glider program, engineers designed more than 4,000 jigs and fixtures for mass assembly, the Ford statement said. Produced by Ford shops and many outside firms, the fixtures were tested in the summer of 1941, during creation of the first Ford glider at Dearborn.

Among claims made for the gluing process is that in one operation, in which wing sections are joined, drying time is reduced from five hours to 30 minutes. Ford engineers said the rubber tubing system, by applying a constant pressure of 10 pounds per square inch on the glue-joint areas, smooths out any irregularities of surface marring the plywood skin.

Kaiser Purchases Fleetwings Firm

Negotiations have been complete by Henry J. Kaiser for the pu chase of all outstanding stock Fleetwings, Inc., Bristol, Pa., Kai announced in New York Mar. 6.

The Fleetwings company is o of the leaders in development stainless steel for aircraft, and well known for its engineering a complishments.

The pioneering shipbuilder sa he had gone into Fleetwings "on m own," and that it was not a joi Kaiser-Hughes venture. Howe Hughes' aircraft company is h associate on a big cargo plane pr gram.

The statement said the War De had approved the transaction. is understood no executive chang will be made in Fleetwings at th present time, and that its work fo the Army will continue on an ac celerated basis.

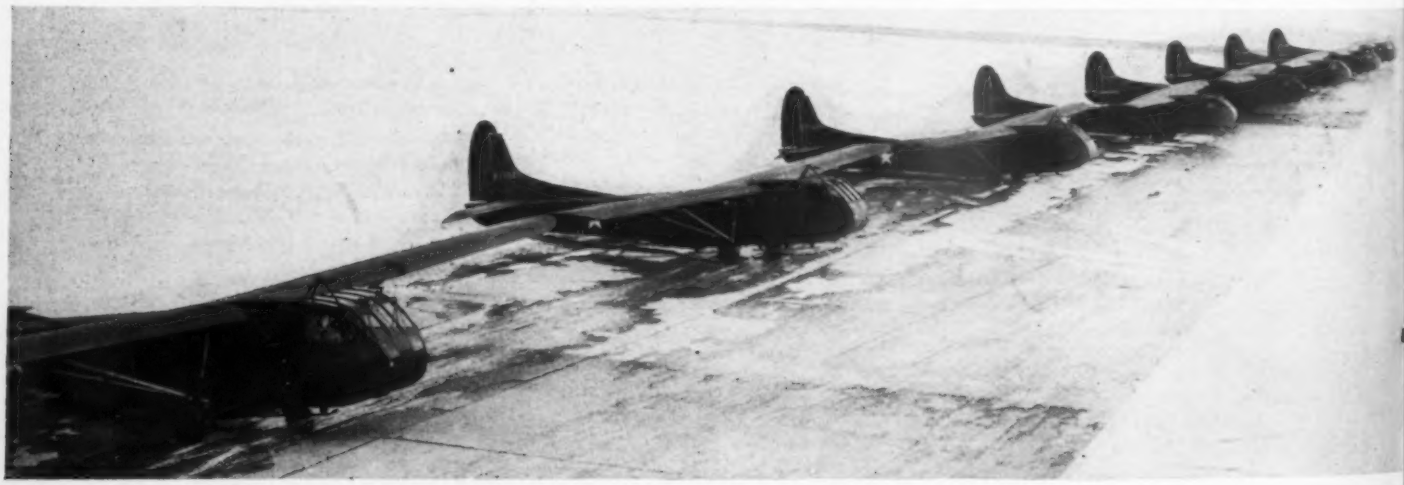
Late in February Kaiser an nounced formation of the Walsh Kaiser Co. Inc., to operate th Maritime Commission's shipyard a Providence, R. I. Thomas J. Walsh New York subway contractor, i president of the company.

Am. Central Nets $469,177; Sales Up

American Central Manufacturing Corp., Connersville, Ind., report $469,177 net profit, or $1.54 a shar common, for the fiscal year ende Nov. 30, 1942, on sales of $10,513,000, "nearly three times" the tota for the previous year.

In fiscal '41, sales were $115,33 or 38c a share. Provision for Federal taxes in the 1942 year wa $1,365,000, compared with $60,000 i the 1941 year. Working capital a the end of fiscal '42 amounted t $1,259,000, company states, whic was an increase of $563,000.

Balance sheet as of Nov. 30, 194 shows total assets as $3,053,988, an current assets as $2,091,937. Cur rent liabilities totaled $832,41 Earned surplus was $213,374.



Built by Ford: These 15-passenger troop-carrying gliders, shown at Ford Airport, Dearborn, Mich., were built in an Upper Peninsula Ford plant. They are shipped "knocked down" by truck to Dearborn where they are assembled and tested prior to acceptance by the Army.

Good News

for WAR PLANTS and AIRLINES with Employee-Training Problems...

A *new* kind of wartime service: Complete *Survey, Organization and Supervision of Employee-training programs*

We are prepared to create or reorganize your educational department; set up or revise curricula; write and produce lectures, texts and examinations; recruit and train instructors; coordinate your program with government vocational courses to obtain maximum benefit from these aids and provide if you wish, continuous supervision of the completed project.

In 1943 your production schedules will depend upon *adequate* training of totally inexperienced employees... most of them women.

You will need new and larger training programs, developed with the same professional planning, organization, and supervision that is customary in your engineering departments.

To help you accomplish this we offer the services of a consulting staff, whose members have spent their lives in developing, conducting and directing technical training programs.

Let us analyze your training needs, survey your existing facilities and submit a detailed report of findings and recommendations.

For additional information or consultation, write to—

CHECK YOUR OWN:
YOU NEED THIS SERVICE...

IF you have no training program and if you need a great many new skilled workers in 1943! ☐

IF your production department is dissatisfied with the skill of the workers developed under your existing programs! ☐

IF your personnel director is finding it increasingly difficult to obtain high-skill employees! ☐

IF your accounting department reports the tempo of your training program as too slow and cost-per-trainee mounting beyond reason! ☐

IF you are training all new hands at one level and depending upon upgrading to replace 1943 losses among high-skill employees! ☐

IF you, yourself, are worried about your ability to replace, with satisfactorily trained women, the male workers under 38 who will be drafted! ☐

REMEMBER . . . your 1943 Production Schedules will depend on your solution to such employee problems as these.

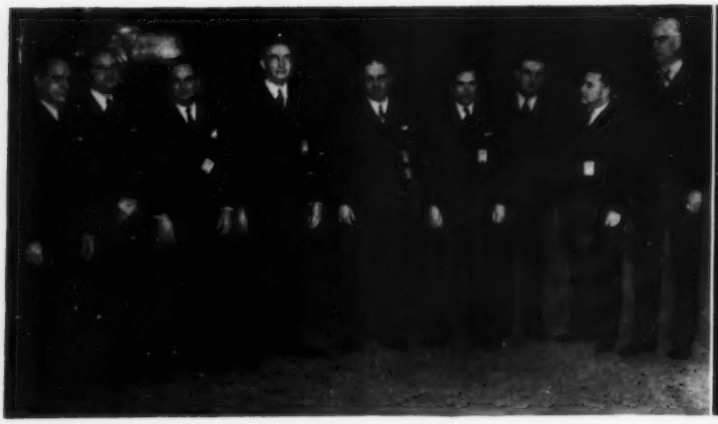
The INSTRUCTOR TRAINING DIVISION of Airport Ground Schools has been exclusively engaged for the past three years in the development of instructors, chief instructors, and directors of training for U. S. Army Air Forces, for flying schools, mechanic training schools and other technical institutions.

Awarded WPB Medal for Outstanding Service

INDUSTRIAL TRAINING DIVISION
of AIRPORT GROUND SCHOOLS
1717 N. VINE ST., LOS ANGELES, CALIFORNIA • PHONE HEmpstead 2107

East Coast Group Names Committees

Aircraft War Production Council, East Coast, Meets at Curtiss-Wright's Buffalo Plant, Elects Glenn Martin Presiden



Top Executives: Seen here, l. to r.: C. A. Van Dusen, president, Brewster; Ralph S. Damon, president and general manager, Republic; G. W. Vaughan, president, Curtiss-Wright; Glenn L. Martin, New Council president, and president of Glenn L. Martin Co.; Victor Emanuel, president, Aviation Corp.; L. C. Goad, general manager, Eastern Aircraft, GMC; Burdette S. Wright, vp, Airplane Division, Curtiss-Wright; Lawrence D. Bell, president of Bell and J. Carlton Ward, Jr., president, Fairchild.

Sub-Contracting: L. to r. are: A. T. Foley, Brewster; I. J. Snader, Aviation Corp.; G. A. Schwobel, Brewster; John J. Lee, Curtiss-Wright; Alfred March, Republic; J. P. Bauer, Bell; Phil Harr, Fairchild; George W. Lohr, Curtiss-Wright; Lester Benson, Bell; C. S. Swayze, Eastern; E. J. Hanson, Eastern; W. A. Bate, Brewster, and T. B. Soden, Martin. Making certain the sub-contracting activities are running smoothly is one of the Council's functions. Exchange of ideas among these committee members is expected to solve many difficulties.

Industrial Relations: Shown seated is C. S. Matoon, Curtiss-Wright. Standing, l. to r., are: Paul Frizzell, Fairchild; Vaughn Bell, Bell; R. E. Waldo, Eastern; A. L. Kress, Republic; Earl E. Neubig, Fairchild; M. C. Monroe, Republic; C. W. Bishop, Aircraft Corp.; R. H. Puffer, Curtiss-Wright, and E. J. Walsh, Eastern.

Engineering Research: Shown seated, l. to r., are: E. L. Zivi, Martin; H. E. McDonald, Curtiss-Wright, and R. W. Miller, Republic. Standing, l. to r., are: G. W. Lescher, Fairchild; R. D. MacCart, Brewster; R. W. Gibson, Bell, and W. F. Burke, Eastern. S. K. Hoffman of Aviation Corp. was absent when picture was taken.

Protection: Seated, l. to r.: P. M. Grezelle, Bell; E. T. Adams, Eastern; E. A. Schurman, Martin, and L. H. Russ, Aviation Corp. Standing are, l. to r.: D. G. Welch, Curtiss-Wright; R. S. Harmon, Curtiss-Wright; William Hamby, Fairchild; H. A. Laughran, Brewster, and A. J. Kelly, Republic. They consider plant protection problems.

Material: Around the table, l. to r., are: Frank Maley, Curtiss-Wright; D. B. Cole, Curtiss-Wright; A. K. Peck, Republic; J. H. Prodoehl, Bell; H. V. Zimmer, Aviation Corp.; Norman T. Shaw, Bell; S. W. Lauer, Martin; O. O. Mueller, Eastern; H. E. Harmon, Eastern; J. D. Hewitt, Fairchild, and V. N. Thacker, Brewster. This is one of the Council's most important committees. It has been holding sessions to interexchange ideas for war production along lines laid down by the Council when it was formed last October.

Service: Seated, l. to r., are: F. C. Fagley, Brewster; N. L. Kearney, Curtiss-Wright; L. H. Clark, Curtiss-Wright; Col. W. V. Andrews, Curtiss-Wright; Miss D. Carr, secretary, and F. Kent Bradford, Fairchild. Standing, l. to r., are: [illegible] Pettinson, Curtiss-Wright; H. A. Hamilton, Curtiss-Wright; Miss J. Reipe, secretary; A. E. Green, Curtiss-Wright; E. O. Rust, Jr., Bell; J. T. Ogle, Martin; Art Greto[illegible], Aviation Corp.; W. F. Miller, Curtiss-Wright; W. H. Hughes, Curtiss-Wright; Allen Wescott, Eastern; Don Tasker, Republic; Don Parker, Republic, and A. Wil[illegible], Curtiss-Wright.

All are Serving

One and all, American Airlines personnel is dedicated to maintaining in this Airline a national asset of highly-developed effectiveness. Never have American's high standards been more purposeful and more vigorously cherished.

The uniforms which American Airlines' people wear are an outward expression of those standards. They are today badges of war-service worn by pilot and stewardess...by those who perform the many indispensable tasks of reservations and ticketing...by those in vital posts behind the scenes.

Beyond its immediate war significance, an American Airlines uniform is also something more. It is the symbol of membership in a *universal* fellowship...the fraternity of high-purposed men and women who are building the Air Age.

AMERICAN AIRLINES *Inc.*

ROUTE OF THE FLAGSHIPS

POWER GUN for CHERRY BLIND RIVETS

Positive mechanical action is the most important single attribute to the successful operation of the Cherry Blind Rivet. Head formation and shank expansion are produced by a pulling force exerted on a mandrel passing through the rivet. A continuous pull may be applied by a pneumatic gun as shown above, or in field work, where air power is not available, a hand-operated gun may be used.

NEW HANDBOOK... a 16-page handbook of diagrams, dimensional sketches and photographs giving the complete story on the Cherry Riveting Process is available on request. Address Department 4, Cherry Rivet Co., Los Angeles, California.

CHERRY RIVETS, THEIR MANUFACTURE AND APPLICATION ARE COVERED BY U. S. PATENTS ISSUED AND PENDING.

Cherry Rivet Company
LOS ANGELES, CALIFORNIA

Incorporations

Delaware—Martin Aeroplane Development Laboratory, Inc. Patents. Capital, 100 shares, npv. Principal office, Colonial Charter Co.

Delaware—Wickwire Spencer Aviation Corp. Capital, $11,500. Principal office, the Corporation Trust Co.

New York— Aircraft Tool and Die Corp., New York. Airplane parts, etc. 300 shares. Samuel J. Berger, 351 Fifth Avenue, New York, N. Y.

New York—Equipment Co., Inc., New York. Aircraft of all kinds. 200 shares, npv. Theo. A. Tetreault, 60 E. 42nd St., New York, N. Y.

North Carolina—Blue Ridge Aviation, Inc., principal office, Elkin. To engage in the operation of an airport. Authorized capital stock $100,000; subscribed stock $1,000, by C. C. Myers, Charles C. Poplin and D. Graham Myers, Elkins, and Fred Vestal, Jonesville.

Ohio—Midwest Aircraft Products Co., 915 Valley St., Dayton, O. 150 shares, npv. Incorporators: L. J. Beckman, H. L. Lawner and E. R. Weiss.

Wood Saves 30,000 Tons of Vital Metals In Douglas Plant

Some 30,000 tons of steel, copper and aluminum have been saved for other purposes by the use of wood in Douglas Aircraft Company's new Illinois plant for production of the C-54 Skymaster transport, according to the Austin Co., Cleveland, O., its builders.

Production of these planes is already under way, in this almost all-wooden plant, structural frame of which alone saved about 20,000 tons of steel, the announcement said. Fiber downspouts, asbestos and plastic pipe, together with nonmetallic ventilating ducts and heater and radiator housings were some of the "substitutes" used in accomplishing the metal savings.

Copper wiring was reduced almost one-third by use of a "modern distribution system," and the use of pressed wood reflectors with a synthetic white enamel surface, instead of porcelain enameled steel, saved 132 tons of steel. Even "laminated wood columns" were used in place of large dimension timbers, which could not have been obtained in time for scheduled completion of the plant.

Loughran Elected

H. A. Loughran, passive d... director of Brewster Aeron... Corp., Long Island City., N. Y. succeeded Jack Fogarty as ... man of the Long Island A... Security Conference, accordi... announcement. Besides Br... some other aviation membe... the Conference are Aerial Pr... Inc., Bendix Aviation Corp., Aircraft Corp., Grumman A... Engineering Corp., Liberty A... Products Corp., Ranger A... Division of Fairchild Engine... Airplane Corp., Republic Av... Corp., and Sperry Gyroscope... Inc.

Barlow, Boyd Elected

Dr. Howard Barlow, head ... Aeronautical Engineering D... ment, Agricultural and Mech... College of Texas, has been e... national chairman of the S... of Aeronautical Weight Engi... according to announcement. ... liam O. Boyd, associated with L... heed Aircraft Corp.'s Texas ... has been elected national secre... and James B. Childers, with ... Globe Aircraft Corp., Fort W... was chosen national treasurer.

Eisemann Shifts

American Eastern Corp. has ... nounced its acquisition of Eise... Magneto Corp., of New York, N... Eisemann makes magnetos, el... ignition, generators and engine ... cessories. Officers of Ameri... Eastern are Howard S. Welch, ... ecutive vice-president and ... president of Eisemann, and O. ... Ashman, treasurer, of both Am... ican Eastern and Eisemann.

VULTEE AIRCRAFT, Inc., ... tee Field, Cal., has announced ... frequency rate of lost time injur... in its Tennessee division was ... per 1,000,000 man-hours of expos... in 1942, half the 6.69 rate in 19... this was accomplished despite ra... increase in personnel and gro... man-hours worked per capita.

GENERAL MOTORS Corp., ... troit, Mich., Chevrolet division, ... nounces provision for five-fold ... crease in contracts for product... of Pratt and Whitney aircraft ... gines in new contract negotiati...

Wooden Factory: Douglas Aircraft's Illinois plant, which w... soon be turning out C-54 transports, was built almost entirely o... wood, saving 30,000 tons of steel and other critical materia... Asbestos cement siding was used to enclose sidewalls. Large fra... formers are shown here as they arrived at the site on special under... slung flatcars.

XUM

Wings and Words together will build a better world

Today they're teamed together to open and *keep open* our life lines 'round the globe. Aviation speeds men, mails and materiel across new routes to every theatre of war—and Western Electric radio helps to make this possible.

This team of Wings and Words is building a firm foundation today for a better world tomorrow—when air transport and radio will make neighbors of all nations.

In that better world, Western Electric will continue its 60-year leadership in equipment to transmit the spoken word—greatest builder of understanding and friendship.

Western Electric

XUM

Mfg. Digest

CURTISS-WRIGHT Corp., New York, N. Y., reports it has already accepted more than 400 of the 800 "Cadettes" it has sought from college women, who will be enrolled in the specially designed 10 month aviation engineering courses C-W has planned in seven universities. "Cadettes" are registered as special students, and are classified by the company as engineering student employes. Besides receiving tuition, room and board, they are paid $10 weekly. Those having qualifications of age and preliminary college training in mathematics are enrolled, which started early in February, at: Cornell University, Rensselaer Polytechnic Institute, Pennsylvania State College, Purdue University, University of Minnesota, Iowa State College and the University of Texas.

GENERAL MOTORS Corp., Detroit, Mich., has disclosed that steady expansion in 1942 has provided facilities for its Buick division to triple its output during 1943, of Pratt and Whitney aircraft engines at Michigan and Illinois plants.

BOOTH MANUFACTURING Corp., Burbank, Cal., has announced its entrance into the aircraft hydraulic field, and plans to include the development and manufacture of a complete new line of hydraulic equipment, first unit of which is a power brake valve.

New Cargo Plane: A freight load of 400 lbs. can be easily carried in this cargo version of the Aeronca Super Chief, the company states. Note the wide door to facilitate loading and unloading.

ALLIED AVIATION Corp., Baltimore, Md., has reported its North Carolina plant will soon be ready for glider production. Some experimental work has already been done.

AMERICAN AVIATION Corp., Jamestown, N. Y., reveals its New York state plant is more than half finished, and that the administrative section of the building should be ready for occupancy by March 31. Plant is of the airport hangar type.

GOODYEAR AIRCRAFT Corp., Akron, O., has announced its completion of the first fully assembled Goodyear FG-1, "first built Akron combat plane". This is a Navy fighter, made from the design of the F4U Vought-Sikorsky Corsair.

Aeronca Reports New Cargo Plane

A light cargo plane, converted by Aeronca Aircraft Corp., Middletown, O., from its Super Chief, is the "first light cargo plane in the history of aviation," according to the company.

The plane is now away on maneuvers, being put through additional tests before Army officials. It is said to be capable of carrying 400 pounds. A specially built door on the left side of the fuselage drops down vertically just behind the door to the front seat. Loading can also be accomplished from the left side through the regular door. To make more room, the dual control has been changed so that the pilot operates entirely from the left.

Aeronca believes that this plane, because of its low landing speed, its simplicity of operation, will be suitable for transportating war materials and other cargo to "various distribution points." Company hopes it will also be useful in hauling supplies from otherwise inaccessible regions such as those in Brazil and China, and possibly in carrying freight from one point to another behind the lines.

ROHM AND HAAS Co., Philadelphia, Pa., discloses its Plexiglas plant recently was awarded the Army-Navy Production Award for its "excellent" production of Plexiglas aircraft noses and turrets.

WICKWIRE SPENCER AVIATION Corp., New York, N. Y., the new subsidiary of Wickwire Spencer Steel Co., for production of automatic variable pitch propellers, as announced. E. C. Bowhead of the parent company, president of the new firm, Geo. H. Creveling is secretary-treasurer and C. I. Collins is executive vice president. They also comprise the board of directors. Plants are in Virginia and Illinois.

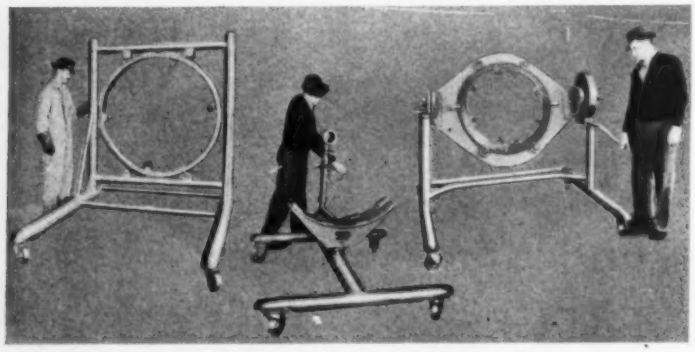
Fly via CONTINENTAL to MONTERREY and MEXICO CITY

Through its connections with American Airlines at El Paso, Continental now offers you *fast daily service* to Monterrey and Mexico City. Ask your Continental office for complete information, when planning a trip *"south of the border."*

Make reservations early

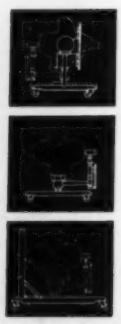
CONTINENTAL AIR LINES

CONTINENTAL AIR LINES



The WHITING ETN

MATCHED ASSEMBLY LINE UNITS



Whiting ETN Assembly Line Units are designed to facilitate the handling and moving of any radial aircraft engine from the time it leaves its packing case through the final stage of engine nacelle build-up.

Model E Engine Cleaning Stand, with two-way rotating arrangement, supports engine for initial operations, wash-up, and preliminary assembly of accessories.

Model T Engine Transfer Carriage, with its hydraulic lift, simplifies shifting of engines from Model E to N.

Model N Rotatable Nacelle Build-Up Unit provides a rotatable support for the efficient, final assembly of accessories, cowling, plumbing, wiring, and other parts.

Main Office and Plant: 15647 Lathrop Ave., Harvey, Ill. Western Office: 6381 Hollywood Blvd., Los Angeles, Calif. Canadian Subsidiary: Whiting Corporation (Canada), Ltd., Toronto and Montreal. Branch Offices in New York, Chicago, Buffalo, Birmingham, Pittsburgh, Detroit, Cincinnati, St. Louis, and Washington, D. C.

WHITING CORPORATION *Aviation Division*

WORLD'S PREMIER AIRPLANE FABRIC

LIGHTER STRONGER SMOOTHER

FLIGHTEX

SUNCOOK MILLS - 40 WORTH ST. - NEW YORK, N. Y.

Leading Manufacturers of Fabric and Tapes for the Aircraft Industry.

FLIGHTEX FABRIC

Export Representative—Aviation Equipment & Export, Inc. 25 Beaver St., N. Y.

Cable Address —

On the Labor Front

RO SUPPLY MANUFACTURING CO., INC., Corry, Pa.
NLRB certified IAM-AFL as bargaining representatives of employes as result of election Jan. 14.

R ASSOCIATES, INC., Bendix, N. J.
Controversy over wage rates certified to NWLB.

LUMINUM COMPANY OF AMERICA, INC., Pittsburgh, Pa.
Fifty workers dismissed for participating in continuing strike at plant's smelting division. Work stoppage ceased after third order from NWLB.

ENDIX AVIATION CORP.
Wage controversy with UAW-CIO workers at Wayne, Mich., plant is certified to NWLB. Election at the Julien P. Friez Division, Baltimore, Md., is extended to 40 days from January 27.

OEING AIRCRAFT CO., Seattle, Wash.
IAM-AFL closed plants at Seattle and Renton, Washington, for three hours, threatened continuing mass meeting in protest of delay in NWLB decision.

OHN ALUMINUM & BRASS CORP., Detroit, Mich.
Election directed within 30 days of February 27 for clerical employes to vote for or against UAW-CIO.

REEZE CORPORATIONS, INC., Newark, N. J.
UAW-CIO local union chartered.

ROWNE & SHARPE MFG. CO., Providence, R. I.
NWLB directed company to establish wage rates under job classification schedule for 8000 workers in 75 jobs . . . Wage rates retroactive to three dates depending upon occupation classification within occupation.

HRYSLER CORP., Dearborn, Mich.
NWLB appointed special panel to take evidence on UAW-CIO demands in behalf of 78,000 workers. Hearings were completed in executive session.

ONSOLIDATED AIRCRAFT CORP., San Diego, Cal.
NLRB orders company to cease interfering with employes self-organizational rights.

ORD MOTOR CO., Dearborn, Mich.
NLRB orders dismissal of complaint of UAW-CIO that company interfered in employes' self-organizational rights and discriminated. Highland Park plant, Mich., and Hegewisch plant, Chicago, Ill., are ordered to hold election for plant protection employes to vote for United Plant Workers, Plant Protection Assn., both independent, or neither.

LENN L. MARTIN CO., Baltimore, Md.
Company announces it is abandoning swing shift with approval of Army, Navy and 90% of employes.

ARVEY MACHINE CO., Los Angeles, Cal.
Labor dispute is certified to NWLB.

J. HEINZ CO., Pittsburgh, Pa.
Wildcat strike forced halt in production of aircraft parts, workers agreed to return to work when appealed to by NWLB.

OEHLER-DOAK AIRCRAFT PARTS DIVISION, Hermosa Beach, Cal.
Wage and union shop issues certified to NWLB for settlement.

OCKHEED AIRCRAFT CORP., Burbank, Cal.
Six charges of discrimination against union workers lodged with NLRB by Aeronautical Industrial District Lodge 727.

URRAY CORPORATION OF AMERICA, Detroit, Mich.
Election is directed within 30 days of February 24, supervisors to vote for or against Murray Ecorse Supervisors Association.

ACKARD MOTOR CAR CO., Detroit, Mich.
Election directed within 30 days of February 23 for plant protection workers to vote for or against UAW-CIO.

EPUBLIC AIRCRAFT CORP., Detroit, Mich.
Election to be held within 30 days of Feb. 22 for or against Amalgamated Plant Protection Association.

OHN A. ROEBLING'S SONS CO., Roebling, N. J.
Company is directed by NWLB to grant increase of 5½c per hour retroactive to February 15, 1942.

OLAR AIRCRAFT CO., San Diego, Cal.
Employes vote to abolish company union and join IAM-AFL.

THOMPSON PRODUCTS CO., Cleveland, O.
NLRB directs election to be held within 30 days of February 15 to vote between UAW-CIO and Society of Tool and Die Craftsmen, Independent.

U. S. RUBBER CO., Indianapolis, Ind.
Dispute is certified to NWLB; issue contract negotiations with URW-CIO.

WRIGHT AERONAUTICAL CORP.
Petition filed by Guards and Watchman's Local-AFL dismissed after January 18 election. Results showed 49% voted against any union.

THE TOMORROW YOU'RE FIGHTING FOR:

YOUR AIRPORT TAXI*

TOMORROW, you'll take the elevator *to the roof* of your building and hop into your air cab. A mild purr of the tiny motor . . . straight up, you go . . . then "float" along, within the 2-miles-a-minute city speed limit. And, in 5 minutes . . . instead of 55 . . . you're floating gently down to your mighty airliner.

Air travel *TOMORROW* will be free of today's surface limitations. You'll enjoy a new kind of unhurried speed . . . airliners to most any place . . . every hour, on the hour . . . or, maybe every half hour.

TODAY, Mr. Air Traveler, you've cheerfully given up sleeper berths, five-course meals and such airline luxuries. You've gladly given up your seat, when necessary, to Army, Navy or other war priority travelers.

But, Oldtimer, you can say to yourself, "Sweet are the uses of Adversity" . . . when you consider TOMORROW'S Air travel . . . which will be yours many years earlier because of the war's aviation developments.

In the meantime . . . in whatever you're doing . . . if it's only buying bonds . . . keep punching! Make that TOMORROW come sooner. It will be worth the price.

**The latest in practical air flivvers is a 90 h.p. baby helicopter which can hover in a stationary position, ascend and descend at any speed, stop, back up, go sideways or forward; gives 15 miles a gallon; present speed 80 m.p.h. Will mass produce at the price of a medium sized car.*

WESTERN AIR LINES
AMERICA'S PIONEER AIRLINE

General Offices: Lockheed Air Terminal, Burbank, Calif.

Manufacturing Personnel

W. A. Hayward, for nearly two years AAF representative at Vultee Aircraft, Inc., Vultee Field, Cal., has been named executive vice president and manager of Intercontinent Aircraft Corp., Miami Springs, Fla.

Ken Ellington, former public relations and radio executive for the Aeronautical Chamber of Commerce of America, Inc., Washington, D. C., has been appointed director of information for the Aircraft War Production Council, East Coast, Inc., New York, N. Y.

J. D. Sherman has recently been appointed plant manager of the New Jersey factories of the Propeller Division of Curtiss-Wright Corp., New York, N. Y.

Maj. Gen. Walter A. DeLamater, formerly associated with the U. T. Hungerford Brass and Copper Co., Standard Textile Prods. Co. and Somerville Iron Works, has been elected a director of the Dowty Equipment Corp., Long Island City, N. Y.

Arthur G. Prangley, formerly chief counsel and assistant secretary of Electrolux Corp., has been appointed secretary and legal counsel of Elastic Stop Nut Corp.

DeLamater Ellington Sherman Hayward

Chester F. Conner, manager distributor sales, Industrial Products Di[vi]sion, B. F. Goodrich Co., has been appointed to the staff of advisers [on] mechanical rubber goods, Office of Rubber Director, WPB, Washingt[on] D. C.

Granville B. Smith, formerly with the Rock Island Arsenal, is now facto[ry] manager of Aircraft Products Co., (formerly Aircraft Products and Equi[p]ment Corp.,) West Chester, Pa., and **Floyd K. McTyier** has joined th[e] firm as comptroller and purchasing agent.

Raymond G. Rech, formerly factory manager of Syracuse Ornament[al] Co., is now assistant director of production for Bell Aircraft Corp., Buffa[lo] N. Y.

James C. Hart, executive vice president of Federal Machine and Weld[er] Co., has been elected president of Taylorcraft Aviation Corp., Alliance, [O.] Hart, **Charles W. Baker, Jr.,** and **Paul O. Buckley** were named directo[rs]

John M. Davies, of the company's research division, has been name[d] director of physical research at B. F. Goodrich Co., Akron, O.

Gunnar B. Taube, formerly chief plant enkineer of Warren City Tan[k] and Boiler Co., has been appointed superintendent of the plant of Cardi[n] Corp., Chicago, Ill., which will manufacture airport fire trucks.

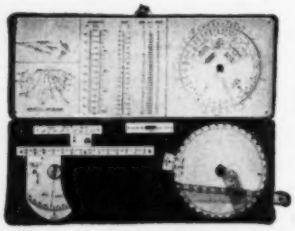
Rodney B. Campbell is now associated with Booth Manufacturing Corp[.] Burbank, Cal.

Thomas P. Archer, formerly assistant general manager of Genera[l] Motors' Fisher Body Division, has been elected vice president in charg[e] of GM's manufacturing and real estate staffs.

John H. Wiles, Gerald R. O'Brien and **Alvin Johnston** are among th[e] new test pilots at Bell Aircraft Corp., Buffalo, N. Y.

Headquarters for Computers

Our staff of engineers specializes in solving complicated problems by means of simple computers that are easy to understand and operate. Mental calculations are reduced to a minimum.



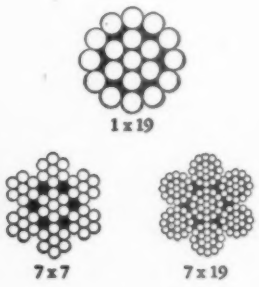
NAVIGATIONAL COMPUTER

Enables a pilot or navigator of aircraft to quickly and accurately solve dead reckoning navigational problems without mental arithmetic. It determines the relation between Air Speed, Ground Speed, Wind Direction and Velocity, Heading, Track and Magnetic Variation. It also incorporates a circular time-speed-distance slide rule, conversion tables and variation chart.

COX & STEVENS AIRCRAFT
CORPORATION
Navigational Instruments - P. O. Box 30, Mineola, N.Y.

Electrode Holder

A light, slender welding electrod[e] holder designed for aircraft weld[ing] has been introduced by Jack[son] Products, Detroit, Mich. Th[e] holder, Model F-1, is made of [a] special high-conductivity copp[er] alloy and has a rated capacity [of] 200 amps. It will handle rod fro[m] the smallest available up to 3/16["] and it is claimed that its ligh[t] weight, 12 ounces, permits eas[y] manipulation in tight places. Th[e] overall length is 7⅞". It is in[-] sulated to restrict flash and spoil[-] age and may be equipped with either solder or mechanical cable connection.



All Macwhyte aircraft products are made to conform to A-N specifications . . . including:

"SAFE-LOCK" TERMINALS . . . in eye end, turnbuckle end, stud end, and fork end.

AIRCRAFT SLINGS ...custom-built for your work. Both standard wire rope and braided slings available.

TIE-RODS ...for internal and external bracing. Streamline, square, round.

NO. 661-A

MACWHYTE COMPANY 2953 Fourteenth Avenue, Kenosha, Wisconsin
Manufacturers of MACWHYTE "Hi-Fatigue" Aircraft Cable—"Safe-Lock" Cable Terminals—Aircraft Tie-Rods—Braided Wire Rope Slings—Monel Metal and Stainless Steel Wire Rope—and Wire Rope for all requirements.

Classified Ads

POSITION WANTED—Technical journalist, contributor to over 50 periodicals, author popular work aeronautics, 11 years writing experience including newspaper training, desires position public, personnel relations or administrative capacity in aircraft industry. Excellent references. Age 35, 3A. Write or wire Box 356, AMERICAN AVIATION, American Building, Washington, D. C.

XUM

Wedding without bells

The scene above is a familiar one at the Boeing plant in Seattle.

It shows the front and rear halves of a Boeing Flying Fortress* fuselage being joined in mechanical wedlock on the final-assembly floor . . . each section so precisely and perfectly manufactured that joining them together, and "hooking up" pre-installed wiring, controls and cables, is a matter of minutes.

In manufacturing so complicated a product as the huge Boeing B-17 under war conditions, the *best* production system is the one which is *most compact* (for it is essential to make every unit of plant space a production asset), *most flexible* (for new combat experience may dictate that design be modified "overnight" without holding up production), and *fastest* (for the scene above can never be familiar *enough*, until the war is won).

The Boeing system of short-flow, multiple-line production fulfils all three of those conditions, and results in *the highest output in the aircraft industry per man, machine, and unit of plant space.* Essentially, it is a system based on "breaking up" the airplane into a number of sections, completing each section on a short assembly line, and finally wedding the major sections into a completed airplane which could, if necessary, be flown away from the final-inspection station.

It is this manufacturing skill and efficiency—combined with Boeing know-how in design, research and engineering—which have made Boeing-designed and Boeing-built Flying Fortresses, Stratoliners* and Pan American Clippers so outstanding in the aviation world.

• • •

It is these things, too, which will some day make the phrase "Built by Boeing" stand for better peacetime products in a free world.

DESIGNERS OF THE FLYING FORTRESS • THE STRATOLINER • PAN AMERICAN CLIPPERS **BOEING**

*THE TERMS "FLYING FORTRESS" AND "STRATOLINER" ARE REGISTERED BOEING TRADE-MARKS

Advertisers In this Issue

Company	Page
Adel Precision Products Corp.	4th Cover
Aero Products Div.—General Motors Corp.	38
Aeroquip Corp.	33
Aircooled Motors Corps.	41
Aircraft Components, Inc.	4
Airport Ground Schools, Inc.	61
American Airlines, Inc.	63
American Export Lines, Inc.	53
Ault & Wiborg Corp.	29
B. G. Corp.	70
Bell Aircraft Corp.	22B
B-H Aircraft Corp.	70
Boeing Aircraft Co.	69
Breeze Corporations, Inc.	47
Cal-Aero	37
Canadian Pacific Air Lines, Inc.	43
Chance Vought Aircraft	55
Cherry Rivet Co.	64
Chicago and Southern Airlines, Inc	12
Continental Air Lines	66
Cox & Stevens Aircraft	68
Curtiss-Wright Corp.—Airplane Div.	22A
Curtiss-Wright Corp.—Propeller Div.	18A
Curtiss-Wright Technical Institute	45
Delta Air Lines	35
Dumore Co.	3d Cover
Elastic Stop Nut Corp.	18B
Foote Brothers Gear & Machine Corp.	3
General Tire & Rubber Co.	23
Goodyear Aircraft Corp.	5
Gulf Oil Corp.	11
Jacobs Aircraft Engine Co.	7
Joyce Aviation, Inc.	10A
Kidde & Co. Inc., Walter	10
Hotel Lexington, Inc.	70
McDonnell Aircraft Corp.	2d Cover
Macwhyte Co.	68
Mallory & Co., Inc., P. R.	48
Martin Co., Glenn L.	40
National Airlines, Inc.	50
North American Aviation, Inc.	31
Pan American Airways, Inc.	21
Parks Air College, Inc.	70
Pioneer Parachute Co.	57
Pump Engineering Service Corp.	10B
R. C. A. Aviation Radio	9
Southwest Airways, Inc.	36
Suncock Mills	66
United Air Lines	59
Western Air Lines	67
Western Electric	65
Weatherhead Co.	26
Whiting Corporation	66
Wilcox Electric Co.	25
Wittek Manufacturing Co.	6

PARKS Graduates are still available for the Commercial Aviation Industry

In addition to the military training program operated by Parks Air College, commercial aviation students are being accepted each term and are being graduated as usual. It is expected that this policy will continue with our usual capacity enrollments.

Even though some ten percent of all Parks graduates are now serving with some branch of the military and naval air forces, each term end sees thoroughly trained men available for commercial aviation.

If your personnel requirements include openings for men who are *trained for leadership*, Parks graduates may well answer your needs. A letter to Oliver L. Parks, President, will bring information on the dates on which men may be available to you.

PARKS AIR COLLEGE, INC.
EAST ST. LOUIS, ILLINOIS

B-H
MANUFACTURERS of SHEET METAL and TUBULAR ACCESSORIES
ENGINE MOUNTS
CONTRACTORS TO ALL LEADING ENGINE and PROPELLER MANUFACTURERS
B-H AIRCRAFT CO.
LONG ISLAND CITY NEW YORK

Financial Briefs

BELL AIRCRAFT Corp., Buffalo, N. Y., directors have approved arrangements for a V-loan of $60,000,000. According to announcement, 29 banks headed by New York Trust Co. will lend the money. Interest will be 3%, with provision for a rate of one-half of one per cent for any portion of loan which is unused. Purpose of loan was not disclosed.

BELLANCA AIRCRAFT Corp., New Castle, Del., reports for 1942 net profit of $690,835, equal to $3.01 a share, common, against a loss in 1941 of $151,954.

UNITED AIRCRAFT PRODUCTS, Inc., Dayton, O., reveals for the year ended Nov. 30, 1942, net income of $1,505,889, equal to $5.72 each on 257,979 shares, common, after provision of dividends on 5½% cumulative convertible preferred stock, and $3,822,101 for Federal income and excess profits taxes. In the months ended Nov. 30, 1941, company had net income of $496,970, or $1.[illegible] common share, and paid $1,063,[illegible] Federal taxes. Fiscal year was changed last year from Dec. 31 to Nov. 30.

BENDIX AVIATION Corp., Detroit, Mich., has announced completion of arrangements for a $150,000,000 revolving V loan, to finance expanding production of war goods. Credit will be provided by a group of 60 banks throughout the country, with National Bank of Detroit as agent. Agreement will remain in effect until Feb. 28, 1946. Initial borrowing will be at least $40,000,000, at a rate of 2¾% on amounts borrowed, [illegible] obligation to pay ¼ of one per cent on the unused portion of the credit.

REPUBLIC AVIATION Corp., Farmingdale, N. Y., directors have voted a dividend of 25c a share, common, which was payable March 10 to holders of record March 1st.

TAYLORCRAFT AVIATION Corp., Alliance, O., directors have authorized payment of back dividends on preferred stock, equal to 75c a share, to Jan. 1, 1943, payable April 1st to holders of record March 15.

CONTINENTAL MOTORS Corp., Muskegon, Mich., has announced a dividend of 15c a share, common, payable March 26 to holders of record March 5. Holders of the old no par and $10.00 par common stock, issued and dated prior to Oct. 1, 1935, will be required to exchange their certificates, share for share, for the present $1.00 par value before receiving this dividend.

AMERICAN AIRLINES, Inc., Jackson Heights, L. I., N. Y., directors have voted a regular quarterly dividend, amounting to $1.0625 a share, on the $4.25 cumulative convertible preferred stock, payable April 15 to holders of record April 1.

BENDIX AVIATION Corp., Detroit, Mich., board of directors have declared a dividend of 75c a share, payable March 31 to holders of record March 16.

SQUARE D Co., Detroit, Mich., directors have declared regular quarterly dividend of $1.25 a share on the [illegible] cumulative convertible preferred stock, payable April 1 to holders of record March 31, and have also declared a dividend of 50c a share, common, payable March 31 to holders of record March [illegible].

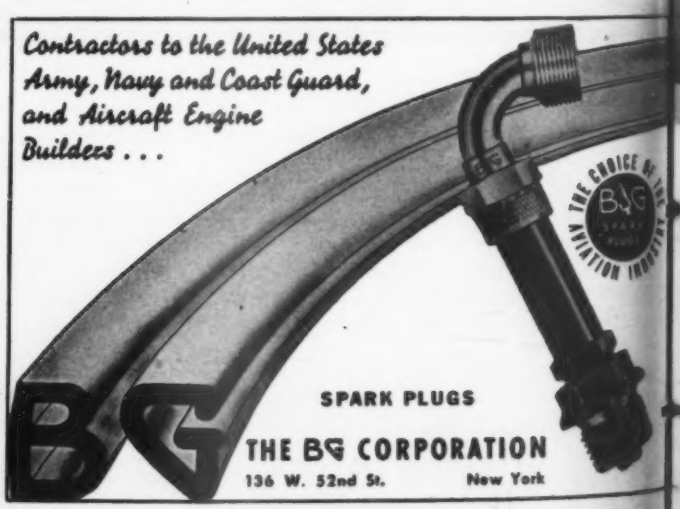
AERO SUPPLY CO., Inc., Corry, Pa., reports for the year ended Dec. 31, 1942, net income of $447,968.45 on sales on $17,722,139.09, which is equal to $1.04 per Class "B" share, and compares with net income of $1.90 on the same stock in 1941. Balance sheet as of Dec. 31, 1942 shows total assets of $7,954,344.23, and current assets of $[illegible] 479,647.73. Current liabilities are $[illegible] 005,879.09.

TRANSPORTATION, TOO!

★ Just 3 minutes from Grand Central Terminal and Radio City areas—convenient to all shopping and business centers—The Lexington is ideally located. Its 801 outside rooms are all equipped with combination tub and shower bath, circulating ice water, full-length mirror, and four-station radio. Rates from $4. Please make advance reservations.
Home of the famous Hawaiian Room

Hotel Lexington
Charles E. Rochester, Vice-Pres. & Mng. Dir.
LEXINGTON AVE., AT 48TH ST., N. Y. C.

Contractors to the United States Army, Navy and Coast Guard, and Aircraft Engine Builders . . .



SPARK PLUGS
THE BG CORPORATION
136 W. 52nd St. New York

MAIL ME THE NEXT [illegible] YEAR OF AMERICAN

XUM

MAIL ME THE NEXT YEAR OF AMERICAN AVIATION and send bill for $3.00

1 year $3.00, for U. S., Mexico, Central and South American Countries. Canada: 1 year $3.50. All other countries, 1 year $4.00.

Send magazines to

Name_____

Address_____

City and State_____

Occupation_____ Company_____

Send bill to

Name_____

Address_____

City and State_____

POSTAGE WILL BE PAID BY ADDRESSEE

NO POSTAGE STAMP NECESSARY IF MAILED IN THE UNITED STATES

BUSINESS REPLY CARD

FIRST CLASS PERMIT NO. 2455-R. SEC. 510 P. L. & R., HARRISBURG, PA

AMERICAN AVIATION ASSOCIATES, INC.

American Building,

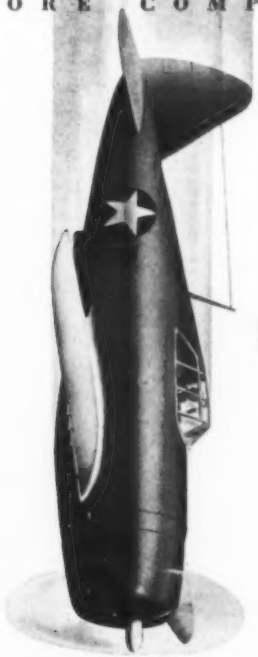
Washington, D. C.

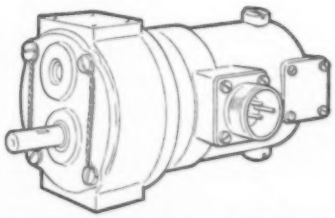
XUM

RIDING A BOLT FROM THE BLUE

Hurtling through space in a vertical power dive at the incredible speed of 725 miles per hour . . . faster than man has ever traveled before . . . faster than the speed of sound . . . the Republic P-47 Thunderbolt is the acme of aviation engineering. Every element of its construction must achieve a new peak of perfection. Riding this bolt from the blue is a Dumore fractional horsepower motor engineered especially for the P-47 . . . designed and constructed to withstand the shattering strain of such a power dive. It is typical of more than 30 types of aviation motors produced by Dumore laboratories to deliver split-second response and *extra hours* of dependable performance far beyond normal service needs. Dumore Aeromotors operate anti-icer pumps, ammunition booster units, aerial cameras, oil cooler exit flaps, wing and cowl flaps, condensate pumps, windshield defrosters and many other vital accessories. Your request for a free Aircraft Motor Catalog will bring complete information on Dumore engineering service, without obligation to you.

THE DUMORE COMPANY, RACINE, WISCONSIN





For Split-Second Response From Vital Controls Depend on

Dumore

FRACTIONAL HORSEPOWER
AIRCRAFT MOTORS

FOR EXTRA POWER HOURS

VALLEY MACHINE CO.
BUCHANAN MFG. CO. PACIFIC METALS
GARRETT SUPPLY COMPANY HORTON & CONVERSE
NEW DEPARTURE SHAW & CO. DETROIT REX PRODUCTS CO.
GASKET MFG. CO. CARBOLOY COMPANY ECCLES & DAVIES M'CHY. CO.
PRATT & WHITNEY DAVIS, C. R., COMPANY CANNON ELEC. DEVELOPMENT CO.
BOYAR-SCHULTZ CORP. OHMITE MFG. COMPANY DAYTON, MARVIN & BAKEWELL, INC.
ACADIA SYNTHETIC PRODUCTS CRANE CO. INTERNATIONAL BUSINESS MACHINE CO.
BRAEBURN ALLOY STEEL CORP. MERCURY METAL DIE & LETTER CO.
FIRTH-STERLING STEELE CO. MILLER DIAL & NAME PLATE CO.
ALLEGHENY LUDLUM STEEL HARTWELL AVIATION SUPPLY
RADIO TELEVISION SUPPLY MULTIGRAPH SALES AGENCY
ANDREWS HARDWARE CO. DITTO SALES & SERVICE CO.
CALIFORNIA SPRING CO. STERLING ELECTRIC MOTORS
COMPTON METALS CO. TINNERMAN PRODUCTS, INC.
HOUGHTON, E. F., CO. COULTER, SIBBETT & BURKE
KNAPP, JAMES H., CO. PRECISION BEARINGS, INC.
HARPER & REYNOLDS OHIO SEAMLESS TUBE CO.
KIRKHILL RUBBER CO. WESTERN RESEARCH LAB.
CASTLE, A. M., CO. TRIPLETT & BARTON, INC.
GATES RUBBER CO. GARLOCK PACKING CO.
JAMISON STEEL CO. GENERAL ELECTRIC CO.
PSENNER-PAUF, INC. SEABOARD SPRING CO.
PACIFIC AIRMOTIVE REPUBLIC STEEL CORP.
DICTAPHONE CORP. MACHINERY SALES CO.
DIE CASTING CORP. PACIFIC BEARINGS CO.
COLLINS-POWELL CO. LANG TOOL & DIE CO.
CALIFORNIA METALS U. S. PLYWOOD CORP.
BAKEWELL MFG. CO. HYCAR CHEMICAL CO.
AIR ASSOCIATES, INC. RAPID BLUE PRINT CO.
COLUMBIA STEEL CO. FAFNIR BEARINGS, INC.
FULLER, W. P., CO. STANDARD RUBBER CO.
BRAUN CORP. REMINGTON RAND, INC.
GRAYBAR ELECTRIC CO.
LEEDS & NORTHROP CO.
PARKER APPLIANCE CO.
STANDARD LUMBER CO.
GENERAL METALS CORP.
SMITH-BOOTH-USHER CO.
MOORE MACHINERY CO.
WARNER & SWASEY CO.
BAKER STEEL & TUBE CO.
ALMQUIST BROS. & VIETS
JORGENSEN, EARL M., CO.
ELASTIC STOP NUT CORP.
FREY INDUSTRIAL SUPPLY
AMERICAN PHENOLIC CO.
BETTIS RUBBER COMPANY
ABEGG AND REINHOLD CO.
CHASE, BRASS & MFG. CO.
AIRCRAFT SPECIALTIES CO.
KENNEDY NAME PLATE CO.
BARSMINN STEEL COMPANY
WHEELOCK, LOVEJOY & CO.
LOS ANGELES HEAVY HDWE.
CENTURY METAL CRAFT, INC.
ALUMINUM CO. OF AMERICA
BARNES, GIBSON & RAYMOND
HOOVER BALL & BEARING CO.
U. S. ELECTRICAL MOTORS CO.
C-O-TWO FIRE EQUIPMENT CO.
KEYSTONE TOOL & SUPPLY CO.
LOUD, H. W., MACHINE WORKS
LINEAR PACKING & RUBBER CO.
HENES-MORGAN M'CHY. CO.
ECONOMY BLUE PRINT & SUPPLY
MACHINISTS TOOL & SUPPLY CO.
CRUCIBLE STEEL CO. OF AMERICA
HARRON, RICKARD & McCONE CO.
DUCOMMUN METAL & SUPPLY CO.
UNION HARDWARE & METAL CO.
GENERAL ELECTRIC SUPPLY CORP.
L'HOMMEDIEU, CHAS. F. L. & SONS
COAST CENTERLESS GRINDING CO.
ACME TOOL AND MFG. COMPANY
WESTINGHOUSE ELEC. SUPPLY CO.
MONROE CALCULATING MACH. CO.
WORTHINGTON PUMP & M'CHY. CO.
CALIFORNIA GASKET & PACKING CO.
FIBRE & METAL PRODUCTS COMPANY
AKEVELL TOOL ENGRAVING COMPANY
HARVILL CO.
(Partial List)
HOWARD WOOKEY

Nightmares for Dictators

MADE IN U. S. A.

ADEL salutes the hundreds of manufacturers and supply companies both large and small who are helping the aviation industry make this dream a fearful reality for the Axis partners. To you and to your workmen we say MAKE EVERY MINUTE COUNT! Though the parts and supplies you furnish may individually seem unimportant remember that Uncle Sam puts wings around them to help our fighters deliver block busters that will soon put an end to aggression. When? It's up to YOU— to your work and purchases of War Bonds and Stamps!

Manufacturers of 3,000 types and sizes of line support, hydraulic, anti-icing and allied aircraft equipment.

ADEL

PRECISION PRODUCTS CORP.

Burbank, California

ENGINEERING SERVICE OFFICES

Admin. Bldg., Love Field
DALLAS, TEXAS

609 Stephenson Building
DETROIT, MICHIGAN

1444 Washington Avenue
HUNTINGTON, W. VA.

303 Wareham Building
HAGERSTOWN, MARYLAND

302 Bay Street
TORONTO, ONT., CANADA